COLLOQUIUM MATHEMATICUM

VOL. 93 2002 NO. 2

SINCERE POSETS OF FINITE PRINJECTIVE TYPE WITH THREE MAXIMAL ELEMENTS AND THEIR SINCERE PRINJECTIVE REPRESENTATIONS

BY

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Abstract. Assume that K is an arbitrary field. Let $(I, \preceq)$ be a poset of finite prinjective type and let KI be the incidence K-algebra of I. A classification of all sincere posets of finite prinjective type with three maximal elements is given in Theorem 2.1. A complete list of such posets consisting of 90 diagrams is presented in Tables 2.2. Moreover, given any sincere poset I of finite prinjective type with three maximal elements, a complete set of pairwise non-isomorphic sincere indecomposable prinjective modules over KI is presented in Tables 8.1. The list consists of 723 modules.

0. Introduction. Throughout this paper $I = (I, \preceq)$ is a finite poset (i.e. partially ordered set) with partial order $\preceq$. We write $i \prec j$ if $i \preceq j$ and $i \neq j$. For simplicity we write I instead of $(I, \preceq)$. The poset I is said to be *connected* if I is not the union of two proper subposets I_1, I_2 such that $I_1 \cap I_2 = \emptyset$. Throughout the paper all posets are assumed to be connected. Following [21] we denote by $\max I$ the set of all maximal elements of I (called *peaks* of I). The poset I is called an *r-peak poset* if $|\max I| = r$, where $|X|$ denotes the cardinality of the set X. A subposet J of I is said to be a *peak subposet* if $J \cap \max I = \max J$.

Throughout the paper, K is a field. We denote by KI the *incidence K-algebra* of the poset I, that is, KI is the K-subalgebra of the full $I \times I$ matrix algebra $\mathbb{M}_I(K)$ consisting of all matrices $[\lambda_{ij}]$ in $\mathbb{M}_I(K)$ such that $\lambda_{ij} = 0$ if $i \not\preceq j$ in $(I, \preceq)$ (see [20], [21]). Given $j \in I$ we denote by $e_j \in KI$ the standard primitive idempotent corresponding to j.

A right KI-module X is identified with a system

$$X = (X_i;\ {}_jh_i)_{i,j\in I}$$

where $X_i = Xe_i$ is a finite-dimensional vector space over K and ${}_jh_i : X_i \to X_j$, $i \prec j$, are K-linear maps such that ${}_ih_i = \mathrm{id}$ and ${}_th_j \cdot {}_jh_i = {}_th_i$ for all $i \prec j \prec t$ in I. Such systems are called *K-linear representations of*

2000 *Mathematics Subject Classification*: 16G30, 16G50, 15A21, 15A63, 14L30.

Partially supported by Polish KBN Grant 5 P03A 015 21.

the poset I. Throughout this paper we often use the word "representation" instead of "module".

We denote by $\mathrm{mod}(KI)$ the category of finitely generated right KI-modules and by $\mathrm{prin}(KI)$ the full subcategory of $\mathrm{mod}(KI)$ consisting of prinjective modules in the sense of the following definition. The right KI-module X is called *prinjective* if X is finitely generated and the right module Xe_- over the algebra $KI^- \cong e_-(KI)e_-$ is projective, where $I^- = I \setminus \max I$ and $e_- = \sum_{j \in I^-} e_j$. It is easy to prove that a module X in $\mathrm{mod}(KI)$ is prinjective if and only if there exists a short exact sequence

$$0 \to P_1 \to P_0 \to X \to 0 \tag{0.1}$$

in $\mathrm{mod}(KI)$, where P_0, P_1 are projective KI-modules and P_1 is semisimple of the form $P_1 = \bigoplus_{p \in \max I} (e_p KI)^{t_p}$, $t_p \geq 0$ (see [17] and [25]).

It follows from [17] that the category $\mathrm{prin}(KI)$ is additive, has the finite unique decomposition property, is closed under extensions in $\mathrm{mod}(KI)$, has Auslander–Reiten sequences, source maps and sink maps, and has enough relative projective and relative injective objects.

Following [21] the poset I is said to be of *finite prinjective type* if the category $\mathrm{prin}(KI)$ is of finite representation type, that is, the number of isomorphism classes of indecomposable modules in $\mathrm{prin}(KI)$ is finite. It follows from [21, Theorem 3.1] that the definition does not depend on the choice of K.

Let us recall that a complete set of 14 sincere one-peak posets of finite prinjective type and their 42 sincere prinjective representations was given by M. Kleiner in [12], [13] (see also [20, Theorem 10.2 and Tables 10.7] for a correction of Kleiner's list of [13]). A complete list of 60 sincere two-peak posets of finite prinjective type and their 328 sincere prinjective representations is presented in [14].

In the present paper we continue the study of sincere posets started in [14], where the motivation for the study of prinjective modules is presented. For the motivation see also [2], [28]–[30].

The main aim of this paper is to give a complete set of sincere three-peak posets I of finite prinjective type (Tables 2.2) and a complete set of indecomposable modules in $\mathrm{prin}(KI)$ and their coordinate vectors (Tables 8.1). We prove in Theorem 2.1 that there are precisely 90 sincere three-peak posets $\mathcal{F}_1^{(3)}, \ldots, \mathcal{F}_{90}^{(3)}$ of finite prinjective type. Moreover we prove in Theorem 2.1 that every sincere indecomposable prinjective module over the K-algebra $K\mathcal{F}_j^{(3)}$, $1 \leq j \leq 90$, is isomorphic to one of the sincere prinjective modules $M_j^{(i,3)}$ listed in Tables 8.1. The total number of sincere indecomposable prinjective representations of three-peak posets of finite prinjective type is 723. Finally, we show in Theorem 7.4 that the incidence K-algebra KI of any sincere poset of finite prinjective type is a tilted algebra and therefore gl.dim $KI \le 2$.

Our construction of posets is presented in Section 6 and applies two computer implementable algorithms (Algorithms 6.7 and 6.8). We construct inductively sincere posets I of finite prinjective type such that $|I| = n+1$ from sincere posets J of finite prinjective type such that $|J| = n$. Here we develop the technique introduced in [14].

The main results of this paper were presented to the International Conference "Representations Theory of Algebras" in Beijing (August 2000). A similar problem in the setting of weakly positive quadratic forms was studied by M. V. Zeldich in [27].

The author would like to express her sincere thanks and appreciation to Professor Daniel Simson for formulating the problem, for his careful reading of the manuscript and for helpful suggestions and comments. The author wishes to thank Dr. Stanisław Kasjan for remarks on the proof of Theorem 7.4.

1. Preliminaries and notation. Following [17] and [21] we define the *coordinate vector* $\mathbf{cdn}\, X \in \mathbb{N}^I$ of a module X in $\mathrm{mod}(KI)$ by

$$(\mathbf{cdn}\, X)(j) = \begin{cases} \dim_K(X_j) & \text{for } j \in \max I, \\ \dim_K(\mathrm{top}\, X)e_j & \text{for } j \in I \setminus \max I, \end{cases} \tag{1.1}$$

where $\mathrm{top}\, X = X/XJ(KI)$ and $J(KI)$ is the Jacobson radical of the algebra KI. We view $\mathbf{cdn}\, X$ as a map $\mathbf{cdn}\, X : I \to \mathbb{N}$.

We recall that a vector $x \in \mathbb{N}^n$ is said to be *sincere* if $x_j \ne 0$ for $j \in \{1, \ldots, n\}$. Moreover the poset I is said to be *sincere* if there exists an indecomposable module X in $\mathrm{prin}(KI)$ with sincere coordinate vector.

Following [6] and [17] we associate with any poset I the *Tits quadratic form* $q_I : \mathbb{Z}^I \to \mathbb{Z}$,

$$q_I(x) = \sum_{i\in I} x_i^2 + \sum_{\substack{i \prec j \\ j \in I\setminus \max I}} x_i x_j - \sum_{p \in \max I} \Big(\sum_{i \prec p} x_i\Big) x_p. \tag{1.2}$$

We frequently use the following characterisation of posets of finite prinjective type given in [21, Theorem 3.1] and completed in [16] (cf. also [4]).

THEOREM 1.3. *For a finite poset I the following conditions are equivalent.*

(a) *I is of finite prinjective type.*

(b) *The quadratic form q_I is weakly positive*, *i.e.* $q_I(v) > 0$ *for any nonzero vector $v \in \mathbb{N}^I$.*

(c) *There exists a preprojective component $\widetilde{\mathcal{P}}(I)$ of the Auslander–Reiten translation quiver $\Gamma(\mathrm{prin}(KI))$ of the category* $\mathrm{prin}(KI)$, *and* $\Gamma(\mathrm{prin}(KI)) = \widetilde{\mathcal{P}}(I)$.

(d) *The set* $\mathcal{R}^+_{q_I} = \{v \in \mathbb{N}^I : q_I(v) = 1\}$ *of positive roots of* q_I *is finite.*
(e) $q_I(\mathbf{cdn}\, X) = 1$ *for every indecomposable module* X *in* $\mathrm{prin}(KI)$.
(f) *The map* $X \mapsto \mathbf{cdn}\, X$ *defines a bijection* $\Gamma(\mathrm{prin}(KI)) \to \mathcal{R}^+_{q_I}$. ∎

The reader is referred to [2], [4], [18] and [20] for the definition of an Auslander–Reiten translation quiver of $\mathrm{mod}(KI)$, $\mathrm{prin}(KI)$ and a preprojective component.

2. The main classification theorem. One of the main aims of this paper is the following result.

THEOREM 2.1. *Let* K *be an arbitrary field.*

(a) *A three-peak poset* I *of finite prinjective type is sincere if and only if* I *has one of the* 90 *forms in Tables* 2.2 *below.*

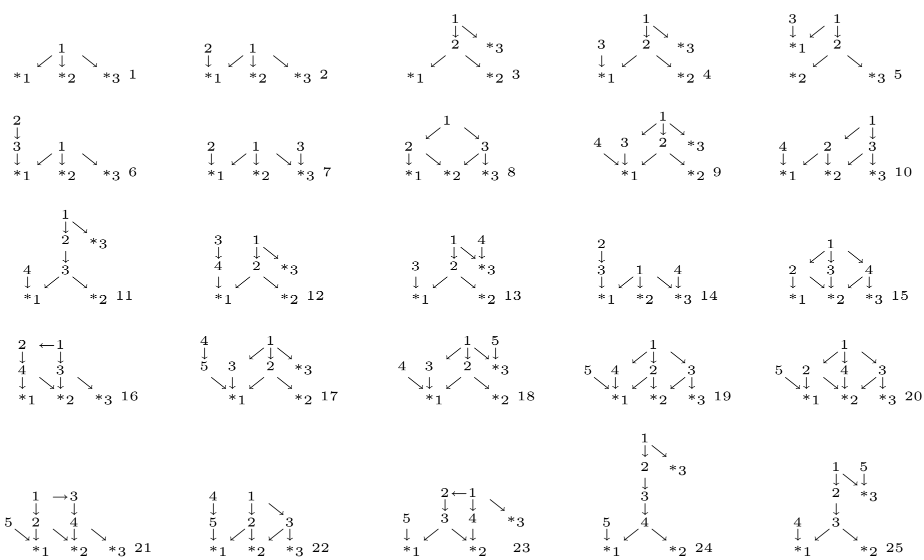
(b) *Let* $\mathcal{F}^{(3)}_i$ *be a poset of Tables* 2.2 *and let* $q_{\mathcal{F}^{(3)}_i}$ *be the associated quadratic form. A sincere positive vector* $z \in \mathbb{N}^{\mathcal{F}^{(3)}_i}$ *satisfies* $q_{\mathcal{F}^{(3)}_i}(z) = 1$ *if and only if* z *is one of the vectors* $z^{(j,3)}_i$ *in Tables* 8.1 *of Section* 8.

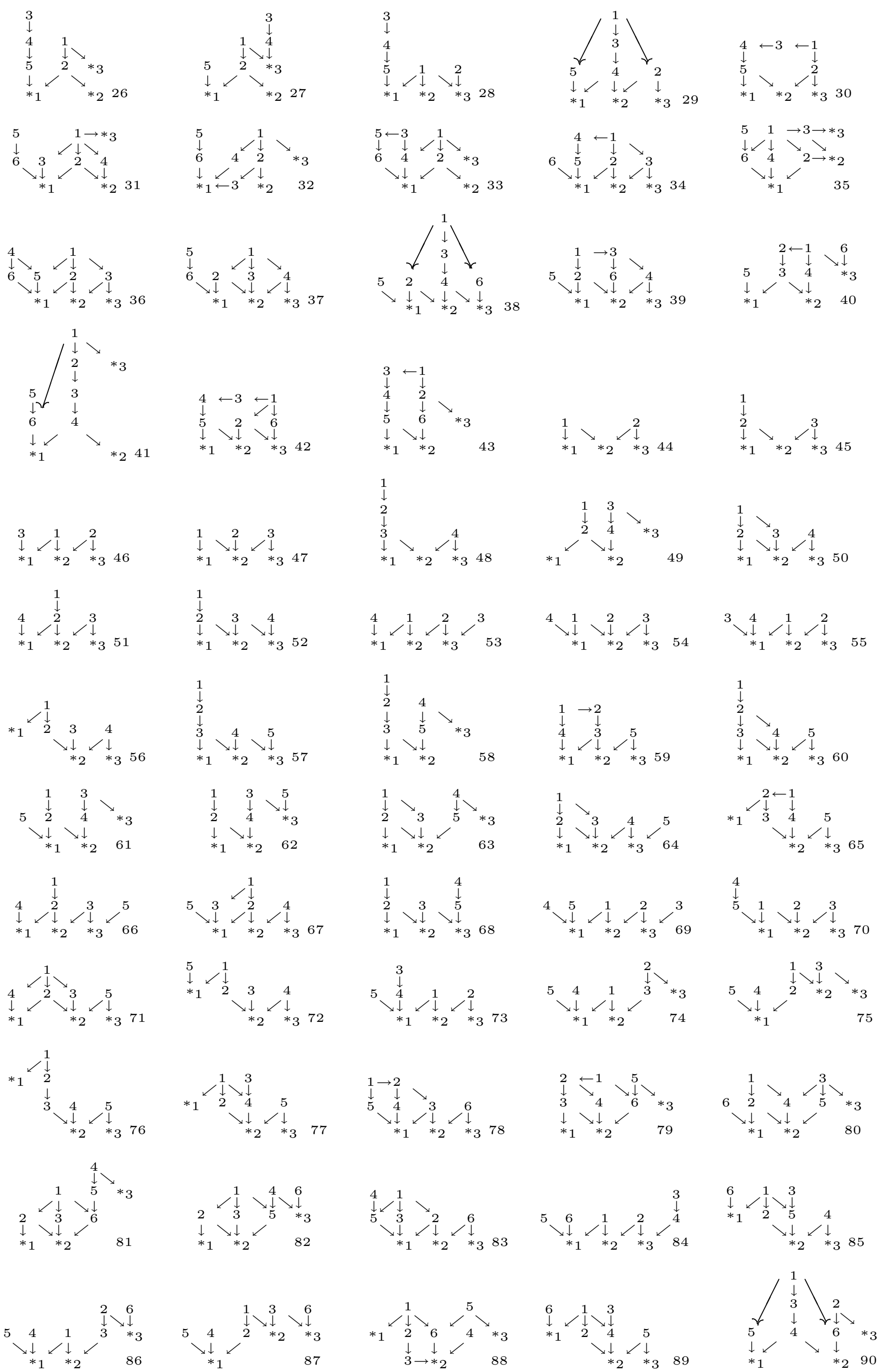
(c) *An indecomposable prinjective* $K\mathcal{F}^{(3)}_i$*-module* X *is sincere if and only if* X *is isomorphic to a module* $M^{(j,3)}_i$ *in Tables* 8.1.

We prove Theorem 2.1 in Section 7 by developing the methods introduced in [14] and in Section 6 of the present paper.

Tables 2.2

Sincere three-peak posets $\mathcal{F}^{(3)}_1, \dots, \mathcal{F}^{(3)}_{90}$ of finite prinjective type





3. The peak reduction. The peak reduction described in [11] allows us to reduce some problems for r-peak posets to corresponding problems for $(r-1)$-peak posets. In Section 7 we apply this idea and its generalisation given below to construct sincere indecomposable prinjective modules.

If $|\max I| \geq 2$, then $q \in \max I$ is said to be a *weak reducible peak* if there exists $c \in I$ such that

(i) there is no $t \in I$ such that $c \prec t \prec q$,
(ii) the subposet $I_q := q^{\triangledown} \setminus \{c\}$ of I is linearly ordered.

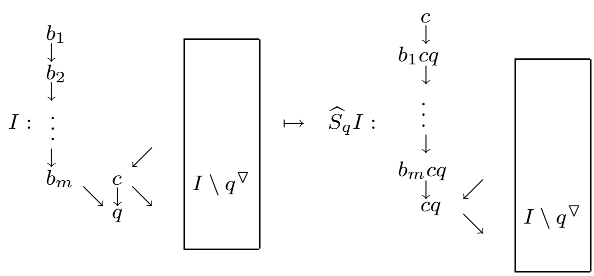
The poset I is said to be *weak peak reducible* if there exists a weak reducible peak in I; otherwise I is said to be *weak peak irreducible*. If $q \in I$ is a weak reducible peak, then we define the poset $\widehat{S}_q I$ as follows. Let $I_q = \{b_1 \prec \ldots \prec b_m\}$. We set

$$\widehat{S}_q I = \{c, b_1cq, \ldots, b_mcq, cq\} \cup (I \setminus q^{\triangledown}) \tag{3.1}$$

where $b_1cq, b_2cq, \ldots, b_mcq, cq$ are new points. The partial order in $\widehat{S}_q I$ is generated by the partial order $\preceq$ in $I \setminus q^{\triangledown}$ and the following relations:

(i) $c \prec b_1cq \prec \ldots \prec b_mcq \prec cq$;
(ii) $cq \prec i$ if $c \prec i$ in I and $i \in I \setminus q^{\triangledown}$.
(iii) $cq \succ i$, if $c \succ i$ in I and $i \in I \setminus q^{\triangledown}$.

The construction $I \mapsto \widehat{S}_q I$ can be visualised as follows:



Following [11, Section 5] we prove some properties of the weak peak reduction. We define a pair of functors

$$\widetilde{G}_q : \mathrm{prin}(K\widehat{S}_q I) \to \mathrm{prin}(KI), \qquad \widetilde{F}_q : \mathrm{prin}(KI) \to \mathrm{mod}(K\widehat{S}_q I)$$

as follows. Given a prinjective $K\widehat{S}_q I$-module $X = (X_i, {}_jh_l)_{i,j,l \in \widehat{S}_q I,\, l \prec j}$ we set $\widetilde{G}_q(X) = (\overline{X}_i, {}_j\overline{h}_l)_{i,j,l \in I,\, l \prec j}$, where

$$\overline{X}_i = \begin{cases} X_i & \text{if } i \in I \setminus q^{\triangledown}, \\ X_{cq} & \text{if } i = c, \\ X_{cq}/\mathrm{Im}\,{}_{cq}h_c & \text{if } i = q, \\ X_{icq}/\mathrm{Im}\,{}_{icq}h_c & \text{if } i \in I_q, \end{cases}$$

${}_j\overline{h}_t = {}_jh_t$ for $j, t \in I \setminus q^{\triangledown}$, ${}_q\overline{h}_c$ is a natural projection and ${}_{b'}\overline{h}_b$, ${}_q\overline{h}_b$, $b, b' \in I_q$, are induced by ${}_{b'cq}h_{bcq}$, ${}_{cq}h_{bcq}$, respectively. Given a prinjective KI-module

$X = (X_i, {}_j h_l)_{i,j,l \in I,\, l \prec j}$ we set $\widetilde{F}_q(X) = (\widehat{X}_i, {}_j\widehat{h}_l)_{i,j,l \in \widehat{S}_q I,\, l \prec j}$, where

$$\widehat{X}_i = \begin{cases} X_i & \text{if } i \in I \setminus q^{\triangledown}, \\ X_c & \text{if } i = cp, \\ {}_q h_c^{-1}(\operatorname{Im} {}_q h_b) & \text{if } i = bcq,\ b \in I_q, \\ {}_q h_c^{-1}(0) & \text{if } i = c, \end{cases}$$

${}_j\widehat{h}_t = {}_j h_t$ for $t \in I \setminus q^{\triangledown}$, ${}_j\widehat{h}_{cq} = {}_j h_c$ for $j \in I \setminus q^{\triangledown}$ and ${}_j\widehat{h}_t$ are natural embeddings in the remaining cases. The functors $\widetilde{G}_q$ and $\widetilde{F}_q$ are defined on morphisms in a natural way.

Now we show that the functor $\widetilde{G}_q$ carries prinjective modules to prinjective ones. Let $Y = (Y_i, {}_j f_i) \in \operatorname{prin}(K\widehat{S}_q I)$. Then the $K(\widehat{S}_q I)^-$-module Ye_- is projective and therefore the $K(\widehat{S}_q I)^-$-module Ye_- has the decomposition $Ye_- \simeq \bigoplus_{i \in (\widehat{S}_q I)^-} (e_i K(\widehat{S}_q I)^-)^{t_i}$ for some $t_i \geq 0$. We can write

$$\begin{aligned} Ye_- \simeq \bigoplus_{i=1}^{m} &(e_{b_i cq} K(\widehat{S}_q I)^-)^{t_{b_i cq}} \oplus (e_c K(\widehat{S}_q I)^-)^{t_c} \oplus (e_{cq} K(\widehat{S}_q I)^-)^{t_{cq}} \\ &\oplus \bigoplus_{i \in I \setminus q^{\triangledown}} (e_i K(\widehat{S}_q I)^-)^{t_i}. \end{aligned}$$

Note that

$$(\widetilde{G}_q(Y))e_- \simeq \bigoplus_{i=1}^{m} (e_{b_i cq} KI^-)^{t_{b_i cq} - t_c} \oplus (e_c KI^-)^{t_{cq}} \oplus \bigoplus_{i \in I \setminus q^{\triangledown}} (e_i KI^-)^{t_i}$$

is a projective KI^--module and therefore the KI-module $\widetilde{G}_q(Y)$ is prinjective.

Let us warn the reader that the functor $\widetilde{F}_q$ does not carry prinjective modules to prinjective ones, in general.

Lemma 3.2. *The functors $\widetilde{G}_q$ and $\widetilde{F}_q$ induce equivalences of categories*

$$(\operatorname{prin}(KI))'_q \underset{\widetilde{\mathbf{G}}'_q}{\overset{\widetilde{\mathbf{F}}'_q}{\rightleftarrows}} \operatorname{prin}(K\widehat{S}_q I) \tag{3.3}$$

inverse to each other, where $(\operatorname{prin}(KI))'_q$ is the full subcategory of $\operatorname{prin}(KI)$ consisting of the objects X without direct summands from $\operatorname{prin}(K(q^{\triangledown} \setminus c^{\triangledown}))$ and such that $\widetilde{F}_q(X)$ is a prinjective $\widehat{S}_q I$-module.

Proof. Note that it is enough to prove the following four statements:

(1) if $X \in (\operatorname{prin}(KI))'_q$, then $\widetilde{G}'_q(\widetilde{F}'_q(X)) \simeq X$,

(2) if $Y \in \operatorname{prin}(KS_q I)$, then $\widetilde{F}'_q(\widetilde{G}'_q(Y)) \simeq Y$,

(3) if $f : X \to Y$ is a morphism in $(\operatorname{prin}(KI))'_q$, then $\widetilde{G}'_q(\widetilde{F}'_q(f)) \simeq f$,

(4) if $f : X \to Y$ is a morphism in $\operatorname{prin}(KS_q I)$, then $\widetilde{F}'_q(\widetilde{G}'_q(f)) \simeq f$.

For (1), let $X = (X_i, {}_jh_i) \in (\mathrm{prin}(KI))'_q$. Since X is prinjective, the linear maps ${}_{b_j}h_{b_i}$ are injective. Moreover ${}_qh_{b_m}$ is injective and ${}_qh_c$ is surjective, because $X \in (\mathrm{prin}(KI))'_q$. This yields the isomorphisms

$$\begin{aligned}
\widetilde{G}'_q(\widetilde{F}'_q(X))_{b_i} &= {}_qh_c^{-1}(\mathrm{Im}\,{}_qh_{b_i})/\mathrm{Im}\,{}_{b_icq}\widehat{h}_c \simeq {}_qh_c^{-1}(\mathrm{Im}\,{}_qh_{b_i})/{}_qh_c^{-1}(0)\\
&\simeq \mathrm{Im}\,{}_qh_{b_i} \simeq X_{b_i},\\
\widetilde{G}'_q(\widetilde{F}'_q(X))_q &= X_c/\mathrm{Im}\,{}_{cq}\widehat{h}_c \simeq X_c/{}_qh_c^{-1}(0) \simeq X_q.
\end{aligned}$$

Moreover immediately from the definitions of the functors $\widetilde{G}'_q$ and $\widetilde{F}'_q$ it follows that $\widetilde{G}'_q(\widetilde{F}'_q(X))_c = X_c$ and $\widetilde{G}'_q(\widetilde{F}'_q(X))_i = X_i$ for the remaining $i \in I$. Hence (1) follows easily.

The proofs of (2), (3) and (4) are similar. ∎

4. Tits forms and their positive roots. Tits forms and their positive roots are fundamental in our considerations of Sections 5 and 6. Below we collect some properties of positive roots of integral quadratic forms. For the proofs the reader is referred to [10], [14] and [18].

Let $q : \mathbb{Z}^n \to \mathbb{Z}$ be an *integral quadratic form*, that is,

$$q(x_1,\ldots,x_n) = \sum_{i=1}^{n} x_i^2 + \sum_{i<j} \alpha_{ij}x_ix_j, \tag{4.1}$$

where $x = (x_1,\ldots,x_n) \in \mathbb{Z}^n$ and $\alpha_{ij} \in \mathbb{Z}$.

We call the vector x *positive* if $x \neq 0$ and $x_i \geq 0$ for all $i = 1,\ldots,n$. The integral quadratic form (4.1) is said to be *weakly positive* provided $q(x) > 0$ for all positive vectors $x \in \mathbb{Z}^n$. A vector $x \in \mathbb{Z}^n$ satisfying $q(x) = 1$ is called a *root* of q. If in addition x is positive we call it a *positive root* of q. It is well known that a weakly positive integral quadratic form has only finitely many positive roots (see [18, Section 1]).

A weakly positive integral quadratic form is said to be *sincere* provided there exists a sincere positive root x of q.

For each $i = 1,\ldots,n$ we denote by $e(i)$ the vector of $\mathbb{Z}^n$ having 1 at the ith position and zeros elsewhere.

Let $(-,-)_q$ be the symmetric $\mathbb{Z}$-bilinear form corresponding to q, that is,

$$2(x,y)_q = q(x+y) - q(x) - q(y).$$

Following [18] we define the $\mathbb{Z}$-linear form $D_iq : \mathbb{Z}^n \to \mathbb{Z}$ by

$$D_iq(x) := 2(e(i),x) = 2x_i + \sum_{i\neq j} \alpha_{ij}x_j.$$

Let q be the quadratic form (4.1). The following proposition is proved in [18].

Proposition 4.2. (a) *If x is a root of an integral quadratic form* (4.1), *then* $\sum_{i=1}^{n} x_i D_i q(x) = 2$.

(b) *Let* $x = (x_1, \ldots, x_n)$ *be a positive root of a weakly positive integral quadratic form* (4.1) *and let* $i \in \{1, \ldots, n\}$ *be such that* $x_i \neq 0$. *If* $x \neq e(i)$, *then* $|D_i q(x)| \leq 1$.

(c) *Let* $x = (x_1, \ldots, x_n)$ *be a positive root of a weakly positive integral quadratic form* (4.1). *If* $x \neq e(j)$ *for* $j = 1, \ldots, n$, *then there exists* $i \in \{1, \ldots, n\}$ *such that* $x_i \neq 0$ *and* $D_i q(x) = 1$.

(d) *If* $x = (x_1, \ldots, x_n)$ *is a root of an integral quadratic form* (4.1), *then* $x - D_i q(x) e(i)$ *is a root of* q *for each* $i = 1, \ldots, n$. ∎

The following fact, whose proof may be found in [14], is essentially used throughout this paper.

Proposition 4.3. (a) *If there is a sincere positive root* $x = (x_1, \ldots, x_n)$ *of a weakly positive integral quadratic form* (4.1), *then there exists a sincere positive root* $y = (y_1, \ldots, y_n)$ *of* q *such that*

$$D_i q(y) = 1 \quad \textit{implies} \quad y_i = 1, \tag{4.4}$$

for any $i = 1, \ldots, n$.

(b) *Let* $q : \mathbb{Z}^n \to \mathbb{Z}$, $n > 0$, *be a quadratic form and let* z *be a root of* q. *Then* $z \pm e(i)$ *is a root of* q *if and only if* $D_i q(z) = \mp 1$. ∎

5. Properties of sincere posets of finite prinjective type. Fix an integer $r \geq 1$. The following lemma shows that there are only finitely many r-peak posets of finite prinjective type. A similar result, with a weaker estimate, was presented by S. Kasjan in [8].

Lemma 5.1. *Let* $r > 1$ *be an integer and let* I *be a sincere connected* r*-peak poset of finite prinjective type. Then* $|I| \leq 13r - 1$.

Proof. Let z be a sincere positive root of the quadratic form (1.2). From Proposition 4.2(b) it follows that $|D_i q_I(z)| \leq 1$ for any $i \in I$. We can assume that $D_i q_I(z) \geq 0$ for each $i \in I$. Indeed, if there exists $i_1 \in I$ such that $D_{i_1} q_I(z) = -1$, then $z^{(1)} = z + e(i_1) \neq z$ is a positive root of q_I such that $z^{(1)}_{i_1} > z_{i_1}$ (see Proposition 4.2(d)). If there exists $i_2 \in I$ such that $D_{i_2} q_I(z^{(1)}) = -1$, then $z^{(2)} = z^{(1)} + e(i_2) \neq z^{(1)}$ is a positive root of q_I and $z^{(2)}_{i_2} > z^{(1)}_{i_2}$. In this way we construct a chain $z, z^{(1)}, z^{(2)}, \ldots$ of pairwise different positive roots of q_I. Since I is of finite prinjective type, according to the Theorem of Drozd (see [18, Section 1]) the form q_I has only finitely many positive roots and we conclude that there exists $j \in \mathbb{N}$ such that $D_i q_I(z^{(j)}) > -1$ for all $i \in I$. It follows that there exists a positive root z satisfying $D_i q_I(z) \geq 0$ for each $i \in I$.

In particular, $D_p q_I(z) \geq 0$ for each $p \in \max I$. On the other hand, Theorem 1 of Ovsienko [18, Section 1] yields $D_p q_I(z) = 2z_p - \sum_{i \prec p} z_i \leq 12 - \sum_{i \prec p} z_i$ for $p \in \max I$. Hence there exist at most 12 elements $i \in I$ such that $i \prec p$. Since I is connected, there exists at least one $i \in I$ satisfying $i \prec p_1$ and $i \prec p_2$ for some $p_1 \neq p_2$, $p_1, p_2 \in \max I$. It follows that $|I| \leq 12r - 1 + r = 13r - 1$. ∎

LEMMA 5.2. *Let I be a sincere connected r-peak poset and let z be a sincere positive root of the Tits form q_I. Let $i \in I$ be such that $D_i q_I(z) = 1$ and $z_i = 1$. Then the poset $J = I \setminus \{i\}$ is sincere and connected.*

Proof. Let $x \in \mathbb{N}^J$ be a vector such that $x_j = z_j$ for $j \in J$. By Proposition 4.3(b), x is a sincere root of q_J. Consequently, q_J is sincere, and therefore so is J. To show that J is connected, assume that $J = J_1 \cup J_2$, where $J_1 \neq \emptyset$, $J_2 \neq \emptyset$ are peak subposets such that $J_1 \cap J_2 = \emptyset$. Then $x^{(1)}$, $x^{(2)}$ are sincere roots of q_{J_1}, q_{J_2}, respectively, where $x_j^{(i)} = x_j$ for $i = 1, 2$ and $j \in J_i$. Hence

$$1 = q_J(x) = q_{J_1}(x^{(1)}) + q_{J_2}(x^{(2)}) = 1 + 1 = 2,$$

which is a contradiction. ∎

Let I be a poset. For any $i \in I$ we define the following two subposets of I:

$$i^{\vartriangle} = \{s \in I^- : s \succeq i\}, \qquad i^{\triangledown} = \{s \in I^- : s \preceq i\}.$$

The following theorem provides us with a main tool for our algorithms of Section 6 (compare with [14, Theorem 5.2]).

THEOREM 5.3. *Let I be a connected sincere r-peak poset of finite prinjective type and let $r \geq 3$. Then at least one of the following conditions is satisfied*:

(a) *There exists $j \in I^-$ such that $J = I \setminus \{j\}$ is a sincere connected r-peak poset of finite prinjective type.*

(b) *There exist $p, q \in \max I$ such that $p \neq q$, $|p^{\triangledown}| = 1$, $|q^{\triangledown}| = 1$ and $J_1 = I \setminus \{p\}$, $J_2 = I \setminus \{q\}$ are sincere connected $(r-1)$-peak posets of finite prinjective type.*

Proof. Let z be a sincere positive root of q_I satisfying condition (4.4) for any $i \in I$. Proposition 4.2(c) shows that there exists $p \in I$ such that $D_p q_I(z) = 1$. By Lemma 5.2, the poset $J = I \setminus \{p\}$ is sincere, connected and of finite prinjective type. If $p \in I^-$, then J is an r-peak poset and (a) is satisfied. Let $p \in \max I$. Then

$$1 = D_p q_I(z) = 2z_p - \sum_{i \prec p} z_i = 2 - \sum_{i \prec p} z_i,$$

because $z_p = 1$. It follows that there exists exactly one $i \in I^-$ such that $i \in p^{\triangledown}$ and the set $p^{\triangledown}$ consists of one element. By Proposition 4.2(a), there exists $p \neq q \in I$ such that $D_q q_I(z) = 1$. It follows that the poset $J = I \setminus \{q\}$ is sincere and connected. If $q \in I^-$, then (a) is satisfied. If $q \in \max I$, then we can show similarly that $q^\triangledown$ consists of one element and (b) is satisfied. ∎

In view of Theorem 5.3 we introduce the following definition.

DEFINITION 5.4. Let $r > 1$ be an integer. A sincere r-peak poset $(J, \preceq_J)$ of finite prinjective type is said to be r-*minimal* if there exists an $(r-1)$-peak poset $(I, \preceq_I)$ satisfying the following conditions:

(1) There exists $p \in \max I$ such that $p^\triangledown$ consists of one element.

(2) $J = I \cup \{c\}$, where $c \in (\max J) \setminus I$, $c^\triangledown = \{i\}$, $i \in \min I^-$ and there exists a sincere positive root z of q_I such that $z_i = 1$. ∎

Let I be a sincere r-peak poset of finite prinjective type. Let z be a sincere positive root of q_I satisfying (4.4) for any $i \in I$.

In view of Theorem 5.3, if I is not r-minimal, then there exists $i \in I^-$ such that $I \setminus \{i\}$ is a sincere r-peak poset. For simplicity such an i will be chosen in a special way. For this we need the following two lemmata proved in [14].

LEMMA 5.5. *Let I and z be as above and let $i \in I^- = I \setminus \max I$ be such that $D_i q_I(z) = 1$. Assume that the subset $i^\triangledown = \{c_1 \prec \ldots \prec c_k = i\}$ of I is linearly ordered and satisfies the condition*

$$c_1 \prec p \;\Rightarrow\; i \prec p \tag{5.6}$$

for any $p \in \max I$. Then $D_{c_j} q_I(z) = 1$ for $j = 1, \ldots, k$. ∎

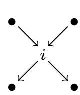
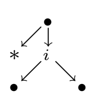
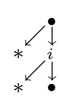
LEMMA 5.7. *Let I and z be as above and let $i \in I^-$ be such that $D_i q_I(z) = 1$. Assume that the subset $i^\vartriangle = \{i = c_1 \prec \ldots \prec c_k\}$ of I is linearly ordered and satisfies the condition*

$$i \prec p \;\Rightarrow\; c_k \prec p \tag{5.8}$$

for any $p \in \max I$. Then $D_{c_j} q_I(z) = 1$ for $j = 1, \ldots, k$. ∎

The following lemma is a generalisation of Lemma 5.7 in [14].

LEMMA 5.9. *Let I and z be as above. Assume that for all $i \in I^-$ such that $D_i q_I(z) = 1$ the assumptions of Lemmata 5.5 and 5.7 are not satisfied. Then I contains a proper peak subposet J containing one of the following three posets*:

$\mathcal{F}_i$:  $\mathcal{F}'_i$:  $\mathcal{F}''_i$: 

where $* \in \max I$ and $\bullet \in I^-$.

Proof. Let z be a sincere root of q_I and let $i \in I$ be such that $D_i q_I(z) = 1$. If the assumptions of Lemma 5.5 are not satisfied, then either $i^\triangledown$ is not linearly ordered or (5.6) is not satisfied. In the first case, I contains the poset

$$\begin{tikzcd}[column sep=small, row sep=small] \bullet \arrow[dr] & & \bullet \arrow[dl] \\ & i & \end{tikzcd}$$

and in the second case, it contains

$$\begin{tikzcd}[column sep=small, row sep=small] & \bullet \arrow[dl] \arrow[dr] & \\ i & & * \end{tikzcd}, \qquad i \not\preceq *.$$

Similarly, if the assumptions of Lemma 5.7 are not satisfied, then I contains one of the following posets:

$$\begin{tikzcd}[column sep=small, row sep=small] & i \arrow[dl] \arrow[dr] & \\ \bullet & & \bullet \end{tikzcd}, \quad \begin{tikzcd}[column sep=small, row sep=small] & i \arrow[dl] \arrow[dr] & \\ j & & * \end{tikzcd}, \qquad j \in I^-,\ j \not\preceq *.$$

Therefore I contains $\mathcal{F}_i$, $\mathcal{F}_i'$, $\mathcal{F}_i''$ or

$$\begin{tikzcd}[column sep=small, row sep=small] \bullet \arrow[dr] & & \bullet \arrow[dl] \\ & i \arrow[dl] \arrow[dr] & \\ j & & * \end{tikzcd}, \qquad j \in I^-,\ j \not\preceq *.$$

Note that in the last case the poset I contains

$$\begin{tikzcd}[column sep=small, row sep=small] \bullet \arrow[dr] & & \bullet \arrow[dl] \\ & i \arrow[dl] \arrow[dr] & \\ + & & * \end{tikzcd}$$

for some $+ \in \max I$, $+ \neq *$ and therefore is of infinite prinjective type (see [21, Theorem 3.1]).

From Proposition 4.2(a) it follows that there exists $j \in I$, $j \neq i$, such that $D_j q_I(z) = 1$. Since z satisfies (4.4) for any $i \in I$, we have $z_j = 1$. Therefore the poset $J = I \setminus \{j\}$ is sincere. Now we can show easily that $J = I \setminus \{j\}$ contains $\mathcal{F}_i$, $\mathcal{F}_i'$ or $\mathcal{F}_i''$. ∎

6. An algorithmic construction of sincere multi-peak posets of finite prinjective type. In this section we present algorithms for the construction of sincere r-peak posets of finite prinjective type (for $r > 1$). We generalise the ideas of [14].

DEFINITION 6.1. We say that a sincere poset $J = (J, \preceq_J)$ is *dominated by a poset* $I = (I, \preceq_I)$ (or I *dominates* J) if $|J| = |I| + 1$ and:

(a) I is sincere.

(b) There exists $j \in J^-$ such that $J \setminus \{j\} = I$ and the relation $\preceq_I$ is the restriction of $\preceq_J$.

(c) There exists a sincere positive root z of q_I such that $\widetilde{z}$ is a sincere positive root of q_J, where $\widetilde{z}_i = z_i$ for $i \neq j$ and $\widetilde{z}_j = 1$.

If in addition $j \in J^-$ is a minimal (resp. maximal) element in J^-, then we say that J is *min-dominated* (resp. *max-dominated*) by I. ∎

Definition 6.2. We call a poset J *iteratively dominated* by a poset I if:

(a) The forms q_I, q_J are weakly positive and sincere, or equivalently, I, J are sincere posets of finite prinjective type.

(b) There exists a chain of posets $J_{(0)}, \dots, J_{(m)}$ such that $J_{(0)} = I$, $I_{(m)} = J$ and $J_{(j)}$ is min- or max-dominated by $J_{(j-1)}$ for $j = 1, \dots, m$. ■

Theorem 6.3. *Let J be a sincere r-peak poset of finite prinjective type, where $r > 2$. If J is not r-minimal, then there exists a sincere r-peak poset I which dominates J.*

Proof. Let $\widetilde{z}$ be a sincere positive root of q_J satisfying (4.4) for any $i \in J$. We show the existence of $i \in J^-$ such that $D_i q_J(\widetilde{z}) = 1$. Proposition 4.2(c) shows that there exists $i \in J$ such that $D_i q_J(\widetilde{z}) = 1$. If $i \in \max J$, then $|i^\triangledown| = 1$. Moreover there exists $i \neq j \in J$ such that $D_j q_J(\widetilde{z}) = 1$. If $j \in \max J$, then $|j^\triangledown| = 1$ (cf. the proof of Theorem 5.3). Hence $I = J \setminus \{j\}$ satisfies conditions (1)–(3) of Definition 5.4, so J is r-minimal. We get a contradiction. Therefore there exists $k \in J^-$ such that $D_k q_J(\widetilde{z}) = 1$ and the poset J is dominated by the sincere r-peak poset $I = J \setminus \{k\}$. ■

Following [14] we define two families $\mathcal{X}_I$, $\mathcal{X}^I$ of posets.

A family $\mathcal{X}_I$. Let $I = (I, \preceq)$ be an r-peak poset such that $|I| = n$, $\max I = \{*_1, \dots, *_r\}$ and let $X_1, \dots, X_k$ be all pairwise different sets consisting of pairwise incomparable elements of I^-. We define new posets $(I_1, \preceq_1)$, $\dots$, $(I_k, \preceq_k)$, $(I_{*_1}, \preceq_{*_1}), \dots, (I_{*_r}, \preceq_{*_r})$ in the following way:

• For $j = 1, \dots, k$ we set $I_j = I \cup \{c\}$, where $c \notin I$ and $\preceq_j$ is the smallest partial order relation satisfying:

(a) $c \preceq_j i$ for all $i \in X_j$,
(b) $i \preceq_j s$ if and only if $i \preceq s$, for $i, s \in I$.

• For $j \in \max I$ we set $I_j = I \cup \{c\}$, where $c \notin I$ and $\preceq_j$ is the smallest partial order relation satisfying:

(a) $c \preceq_j j$ $(j \in \max I)$,
(b) $i \preceq_j s$ if and only if $i \preceq s$, for $i, s \in I$.

We set $\mathcal{X}_I = \{I_1, \dots, I_k, I_{*_1}, \dots, I_{*_r}\}$.

A family $\mathcal{X}^I$. We define dually a finite family $\mathcal{X}^I$ as follows. We form new r-peak posets $(I^1, \preceq^1), \dots, (I^k, \preceq^k), (I^{*_1}, \preceq^{*_1}), \dots, (I^{*_r}, \preceq^{*_r})$, $(I^{1,*_l}, \preceq^{1,*_l})$, $\dots, (I^{k,*_l}, \preceq^{k,*_l})$, $l = 1, \dots, r$, $(I^{1,*_i*_j}, \preceq^{1,*_i*_j}), \dots, (I^{k,*_i*_j}, \preceq^{k,*_i*_j})$, $i \neq j$, $(i,j) \in \{1, \dots, r\} \times \{1, \dots, r\}$, in the following way:

• For $j = 1, \dots, k$ we set $I^j = I \cup \{c\}$, where $c \notin I$, $c \notin \max I^j$ and $\preceq^j$ is the smallest partial order relation satisfying:

(a) $i \preceq^j c$ for all $i \in X_j$,
(b) $i \preceq^j s$ if and only if $i \preceq s$, for $i, s \in I$.

(c) $c \preceq^j *$, $* \in \max I$, if $i \preceq *$ for all $i \in X_j$.

• For $j = *_1, \ldots, *_r$ we set $I^j = I \cup \{c\}$, where $c \notin I$, $c \notin \max I^j$ and $\preceq^j$ is the smallest partial order relation satisfying:

(a) $c \preceq^j j$ $(j = *_1, \ldots, *_r)$,
(b) $i \preceq^j s$ if and only if $i \preceq s$, for $i, s \in I$.

• For $j = 1, \ldots, k$ and $p = *_1, \ldots, *_r$ we set $I^{j,p} = I \cup \{c\}$, where $c \notin I$, $c \notin \max I^{j,p}$ and $\preceq^{j,p}$ is the smallest partial order relation satisfying:

(a) $i \preceq^{j,p} c$ for all $i \in X_j$,
(b) $i \preceq^{j,p} s$ if and only if $i \preceq s$, for $i, s \in I$.
(c) $c \preceq^{j,p} p$ if $i \preceq p$ for all $i \in X_j$.

• For $j = 1, \ldots, k$ and , $p \neq q$, $p, q \in \{*_1, \ldots, *_r\}$ we set $I^{j,p,q} = I \cup \{c\}$, where $c \notin I$, $c \notin \max I^{j,p,q}$ and $\preceq^{j,p,q}$ is the smallest partial order relation satisfying:

(a) $i \preceq^{j,p,q} c$ for all $i \in X_j$,
(b) $i \preceq^{j,p,q} s$ if and only if $i \preceq s$, for $i, s \in I$.
(c) $c \preceq^{j,p,q} p$ and $c \preceq^{j,p,q} q$ if $i \preceq p$ and $i \preceq q$ for all $i \in X_j$.

REMARK 6.4. Note that not for all $i = 1, \ldots, k$, $p, q \in \max I$ there exist posets I^i, $I^{i,p}$ and $I^{i,p,q}$ satisfying the required conditions. ∎

We set $\mathcal{X}^I = \{I^1, \ldots, I^k, I^{*_1}, \ldots, I^{*_r}, I^{1,*_1}, \ldots, I^{k,*_1}, \ldots, I^{1,*_r}, \ldots, I^{k,*_r}, I^{1,*_i,*_j}, \ldots, I^{k,*_i,*_j},\ i \neq j\}$.

LEMMA 6.5. *Let J and I be connected posets of finite prinjective type.*

(a) *If J is min-dominated by I, then $J \in \mathcal{X}_I$.*
(b) *If J is max-dominated by I, then $J \in \mathcal{X}^I$.*

Proof. Let J be a poset of finite prinjective type min-dominated (resp. max-dominated) by a poset I. By Definition 6.1, there exists a minimal (resp. maximal) element c of J^- such that $I = J \setminus \{c\}$ and $\preceq_I$ is the restriction of $\preceq_J$. Let X be the set of all $i \in J^-$, $i \neq c$, such that the relation $c \preceq_J i$ (resp. $i \preceq_J c$) is minimal. Note that elements of X are pairwise incomparable in J^-.

(a) The proof is similar to that of Lemma 6.3 in [14], so we only sketch it.

First we consider the case $X \neq \emptyset$. Since X consists of pairwise incomparable elements of I^- we conclude that $X = X_l$, for some $l \geq 1$, is one of the sets $X_1, \ldots, X_k$ associated with I in the definition of $\mathcal{X}_I$. In this case we have $J = I_l$.

In the case $X = \emptyset$ we have $J = I_p$ for some $p \in \max I$ if $c \preceq_J p$ and $c \not\preceq_J q$ for $p \neq q \in \max I$. Moreover if $c \preceq_J p$ and $c \preceq_J q$ for some $p \neq q$, $p, q \in \max I$, then the poset J is of infinite prinjective type, contrary to assumption. Therefore $c \notin p^\triangledown \cap q^\triangledown$ for all $p \neq q$, $p, q \in \max I$. Hence $J \in \mathcal{X}_I$.

(b) First consider the case $X = \emptyset$. Then there exists exactly one $* \in \max I$ such that $c \preceq *$. Indeed, if there existed $* \neq + \in \max I$ such that $c \preceq +$, then the subposet $*^{\triangledown} \cap +^{\triangledown}$ of J would contain two incomparable elements (because $I = J \setminus \{c\}$ is connected and c is the maximal element of J^-). Therefore from [21, Theorem 3.1] it follows that J is of infinite prinjective type, contrary to assumptions. Therefore there exists exactly one $* \in \max I$ such that $c \preceq *$. In this case $J = I^*$.

Let $X \neq \emptyset$. Consider the following cases.

(1) There exists exactly one $* \in \max I$ such that $c \preceq *$.
(2) There exist exactly two $* \in \max I$ such that $c \preceq *$.
(3) There exist exactly three $* \in \max I$ such that $c \preceq *$.
(4) There exist at least four $* \in \max I$ such that $c \preceq *$.

In case (4), J is of infinite prinjective type (because $\mathcal{P}_{2,0} \subseteq J$, see [21, Theorem 3.1]), and therefore (4) does not hold. In case (3) the poset J is of infinite prinjective type (because $\mathcal{P}'_{3,0} \subseteq J$, see [21, Theorem 3.1]), so (3) does not hold.

Case (1). Let $c \prec * \in \max I$ and let $c \not\prec p \in \max I$ for $p \neq *$. If some $i \in X = X_l$ satisfies: $i \prec * \in \max I$ and $i \not\prec p \in \max I$ for $p \neq *$, then $J = I^l \in \mathcal{X}^I$; otherwise $J = I^{l,*} \in \mathcal{X}^I$.

Case (2). Let $c \prec * \in \max I$, $c \prec + \in \max I$, $* \neq +$, and let $c \not\prec p \in \max I$ for $p \neq *, +$. If some $i \in X = X_l$ satisfies: $i \prec * \in \max I$, $i \prec + \in \max I$ and $i \not\prec p \in \max I$ for $p \neq *, +$, then $J = I^l \in \mathcal{X}^I$; otherwise $J = I^{l,*,+} \in \mathcal{X}^I$. ∎

We set $\mathcal{X}(I) = \mathcal{X}^I \cup \mathcal{X}_I$.

COROLLARY 6.6. *If J is a connected poset of finite prinjective type min- or max-dominated by a poset I, then $J \in \mathcal{X}(I)$.* ∎

Denote by $\mathcal{S}^{(r)}$ the set of all r-minimal posets and by $\mathcal{S}^{(r,m)}$ the set of all r-minimal posets J such that $|J| = m$.

ALGORITHM 6.7 (Construction of sincere posets min- or max-dominated by a given poset).

Input: A sincere r-peak poset I of finite prinjective type.

Output: Sincere r-peak posets of finite prinjective type min- or max-dominated by I.

Description of the algorithm:

STEP 1. Form the sets $X_1, \ldots, X_k$ defined above.

STEP 2. Set $\mathcal{X}(I) = \mathcal{X}^I \cup \mathcal{X}_I$.

STEP 3. Form the set $\mathcal{SR}^+_{q_I}$ of all sincere positive roots of q_I. This set is non-empty and finite because I is sincere of finite prinjective type.

STEP 4. The output is the set $\mathcal{Y}(I)$ of all posets J in $\mathcal{X}(I)$ which satisfy:

(a) J is of finite prinjective type.

(b) There exists a sincere positive root z of q_I such that $D_c q_J(\widetilde{z}) = 1$, where $\{c\} = J \setminus I$, $\widetilde{z}_i = z_i$ for $i \in I$ and $\widetilde{z}_c = 1$. ∎

ALGORITHM 6.8 (Construction of sincere posets iteratively dominated by minimal posets).

Input: The set $\mathcal{S}^{(r)}$ of all r-minimal posets.

Output: All sincere r-peak posets of finite prinjective type iteratively dominated by posets in $\mathcal{S}^{(r)}$.

Description of the algorithm:

STEP 1. Apply Algorithm 6.7 to all posets in $\mathcal{S}^{(r)}$ to get the family $\mathcal{Y}_{(0)} = \bigcup_{J\in\mathcal{S}^{(r)}} \mathcal{Y}(J)$.

STEP 2. For $i \in \mathbb{N}$ define inductively $\mathcal{Y}_{(i)}$ in the following way. If $\mathcal{Y}_{(n)}$ is defined for some $n \in \mathbb{N}$, apply Algorithm 6.7 to any poset $I \in \mathcal{Y}_{(n)}$ to get $\mathcal{Y}(I)$. Set $\mathcal{Y}_{(n+1)} = \bigcup_{I\in\mathcal{Y}_{(n)}} \mathcal{Y}(I)$.

STEP 3. The output is $\mathcal{Y} = \bigcup_{i\in\mathbb{N}} \mathcal{Y}_{(i)}$. ∎

THEOREM 6.9. (a) *Let I and $\mathcal{Y}(I)$ be as in Algorithm* 6.7. *Then $\mathcal{Y}(I)$ is the set of all sincere r-peak posets of finite prinjective type min- or max-dominated by I.*

(b) *Let $\mathcal{S}^{(r)}$ and $\mathcal{Y}$ be as in Algorithm* 6.8. *The set $\mathcal{Y}$ is finite and consists of all r-peak posets of finite prinjective type iteratively dominated by r-minimal posets.*

Proof. (a) Let J be a sincere r-peak poset of finite prinjective type which is min- or max-dominated by I and let $J\setminus I = \{c\}$. Lemma 6.5 shows that $J \in \mathcal{X}(I)$, where $\mathcal{X}(I)$ is defined in Step 2 of Algorithm 6.7. By Definition 6.1, there exists a sincere positive root z of q_I such that $\widetilde{z}$ is a sincere positive root of q_J, where $\widetilde{z}_j = z_j$ for $j \in I$ and $\widetilde{z}_c = 1$. Proposition 4.3(b) shows that $D_c q_J(\widetilde{z}) = 1$. This implies that $J \in \mathcal{Y}(I)$. Conversely, the posets $J \in \mathcal{X}(I)$ of finite prinjective type satisfying condition (b) in Step 4 of Algorithm 6.7 are min- or max-dominated by I (cf. Definition 6.1). Now (a) follows easily.

(b) $\mathcal{Y}$ consists of sincere r-peak posets of finite prinjective type. Therefore it is finite by Lemma 5.1. The remaining assertion is an easy consequence of the definition of an iteratively dominated poset, and Algorithms 6.7 and 6.8. ∎

7. Proof of the main result. The proof of Theorem 2.1 is preceded by two lemmata.

LEMMA 7.1. *Let K be a field, I be one of the posets of Tables* 2.2 *and let M be one of the KI-modules in Tables* 8.1 *of Section* 8. *Then*:

(a) $M \in \mathrm{prin}(KI) \cap \mathrm{mod}_{\mathrm{sp}}(KI)$, *where* $\mathrm{mod}_{\mathrm{sp}}(KI)$ *is the full subcategory of* $\mathrm{mod}(KI)$ *consisting of the modules with projective socle.*

(b) M *is indecomposable.*

(c) M *is sincere.*

(d) *The canonical form of* M *can be represented by* $\{0,1\}$*-matrices.*

Proof. Statements (a), (c) and (d) can be easily checked by a case-by-case inspection of the K-diagrams (shown in Tables 8.1) of the modules M.

We prove (b) by a case-by-case inspection of the KI-modules M in Tables 8.1.

The module $M = M_{73}^{(29,3)}$. Note that $I = \mathcal{F}_{73}^{(3)}$ is a weak peak reducible poset with weak reducible peak $q = *_1$. In this case the weak peak reduction can be visualised by the following diagram:

$$I = \mathcal{F}_{73}^{(3)} : \quad \begin{tikzcd}[sep=small] & & & & 4 \arrow[d] \\ & 2 \arrow[dl] \arrow[d] & 1 \arrow[dl] \arrow[dr] & 3 \arrow[d] & 5 \arrow[dl] \\ *_1 & *_2 & & *_3 & \end{tikzcd} \quad \mapsto \quad S_qI = \mathcal{F}_{31}^{(2)} : \quad \begin{tikzcd}[sep=small] *_1 \arrow[d] & & & 4 \arrow[d] \\ 2 \arrow[d] & 1 \arrow[dl] \arrow[dr] & 3 \arrow[d] & 5 \arrow[dl] \\ *_2 & & *_3 & \end{tikzcd}$$

Note that $S_qI = \mathcal{F}_{31}^{(2)}$ is the sincere two-peak poset of finite prinjective type presented in [14, Tables 8.1]. Since the vector $z_{73}^{(29,3)}$ is a sincere positive root of q_I, by Theorem 1.3 there exists an indecomposable prinjective KI-module X such that $z_{73}^{(29,3)} = \mathbf{cdn}\, X = \begin{smallmatrix} & & & 1 \\ & 2 & 4 & 2 & 2 \\ 1 & 3 & & 5 & \end{smallmatrix}$. By the definition of the functor $\widetilde{G}'_q$ and by Lemma 3.2, the module $Y = \widetilde{G}'_q(X)$ is an indecomposable prinjective S_qI-module such that $\mathbf{cdn}(Y) = \begin{smallmatrix} 1 & & & 1 \\ 1 & 4 & 2 & 2 \\ 3 & & 5 & \end{smallmatrix}$. Note that $\mathbf{cdn}\, M_{17}^{(5)} = \begin{smallmatrix} 1 & & & 1 \\ 1 & 4 & 2 & 2 \\ 3 & & 5 & \end{smallmatrix}$, where the module $M_{17}^{(5)}$ is given in Tables 8.1 of [14]. By Theorem 1.3, there exists an isomorphism $Y \simeq M_{17}^{(5)}$. We recall from [14, Tables 8.1] that $M_{17}^{(5)} \simeq Y = (Y_i, {}_i\varphi_j)_{i \preceq j \in S_qI}$, where the K-linear maps ${}_i\varphi_j$ are given in the standard basis by the following matrices:

$${}_2\varphi_{*_1} = \begin{bmatrix} 0 \\ 1 \end{bmatrix} \quad {}_{*_2}\varphi_2 = \begin{bmatrix} 0 & 0 \\ 1 & 0 \\ 0 & 1 \end{bmatrix}, \quad {}_{*_2}\varphi_1 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix},$$

$${}_{*_3}\varphi_1 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{bmatrix},$$

$${}_{*_3}\varphi_3 = \begin{bmatrix} 0 & 1 \\ 1 & 0 \\ 1 & 1 \\ 0 & 1 \\ 1 & 0 \end{bmatrix}, \quad {}_5\varphi_4 = \begin{bmatrix} 0 \\ 0 \\ 1 \end{bmatrix}, \quad {}_{*_3}\varphi_5 = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}.$$

According to Lemma 3.2 the module $X \simeq \widetilde{F}'_q\widetilde{G}'_q(X) \simeq \widetilde{F}'_q(Y)$ is an indecomposable prinjective KI-module. Moreover the definition of the functor $\widetilde{F}'_q$ shows that $X = (X_i, {}_i\psi_j)_{j\preceq i\in I}$, where $X_i = Y_i$, ${}_i\psi_j = {}_i\varphi_j$ for $i \neq *_1$, $j \neq 2$ and the K-linear map ${}_{*_1}\psi_2$ is given in the standard basis by the matrix ${}_{*_1}\psi_2 = [1\ 0]$. Note that $X = M_{73}^{(29,3)}$, where $M_{73}^{(29,3)}$ is given in Tables 8.1. Consequently, $M_{73}^{(29,3)}$ is an indecomposable prinjective KI-module.

In a similar way we construct the remaining sincere indecomposable prinjective representations of weak peak reducible posets. The details can be obtained from the author upon request. ∎

Denote by $\mathcal{PW}^{(r,n)}$ the set of all sincere r-peak posets of finite prinjective type of cardinality n. Moreover let $\mathcal{W}^{(r,n)}$ be the set of all sincere posets J of finite prinjective type, which are min- or max-dominated by some poset I in $\mathcal{PW}^{(r,n-1)}$, and let $\mathcal{S}^{(r,n)}$ be the set of all r-minimal posets of cardinality n.

LEMMA 7.2. *Let $m \in \mathbb{N}$ and $r > 2$. If no poset from $\mathcal{PW}^{(r,m)}$ contains $\mathcal{F}_i$, $\mathcal{F}'_i$ or $\mathcal{F}''_i$ as a peak subposet, then $\mathcal{W}^{(r,m+1)} \cup \mathcal{S}^{(r,m+1)} = \mathcal{PW}^{(r,m+1)}$.*

Proof. The proof is analogous to the proof of Lemma 7.1 in [14]. ∎

Proof of Theorem 2.1. (c) By Lemma 7.1 any $K\mathcal{F}_i^{(3)}$-module $M_i^{(j,3)}$ in Tables 8.1 is indecomposable, prinjective and $\mathbf{cdn}\, M_i^{(j,3)} = z_i^{(j,3)}$, where $z_i^{(j,3)}$ is given in Tables 8.1. Conversely, let X be an indecomposable prinjective $K\mathcal{F}_i^{(3)}$-module satisfying $\mathbf{cdn}\, X = z_i^{(j,3)}$. Theorem 1.3(f) yields $X \simeq M_i^{(j,3)}$ and (c) is proved.

(b) It is easy to see that any vector $z_i^{(j,3)}$ in Tables 8.1 is a sincere positive vector such that $z_i^{(j,3)} \in \mathbb{N}^{\mathcal{F}_i^{(3)}}$ and $q_{\mathcal{F}_i^{(3)}}(z_i^{(j,3)}) = 1$. Conversely, let $I = \mathcal{F}_i^{(3)}$ be any of the posets of Tables 2.2. In [18, Section 1] and [14, Remark 7.3] one can find a construction of (sincere) positive roots of a weakly positive quadratic form (reflections of roots, construction of Weyl roots). Applying these methods we can prove that any positive sincere vector $z \in \mathbb{N}^I$ such that $q_I(z) = 1$ is one of the vectors $z_i^{(j,3)}$ in Tables 8.1 below. A detailed proof can be obtained from the author upon request.

Now we prove (a) by a case-by-case inspection of the posets of Tables 2.2.

According to [21, Theorem 3.1] any poset $\mathcal{F}_i^{(3)}$ in Tables 2.2 is a three-peak poset of finite prinjective type. Moreover the indecomposable prinjective $K\mathcal{F}_i^{(3)}$-modules $M_i^{(j,3)}$ in Tables 8.1 satisfy $(\mathbf{cdn}\, M_i^{(j,3)})(k) \neq 0$ for all $k \in \mathcal{F}_i^{(3)}$ and therefore $\mathcal{F}_i^{(3)}$ is sincere.

Conversely, let I be a three-peak sincere poset of finite prinjective type. We show that I is one of the posets in Tables 2.2. We use the following notations:

• $X_1, \dots, X_k$ denote pairwise different sets consisting of pairwise incomparable elements of I^-.

• I_i, I^i, I_*, I_+, $I^{i,*}$, $I^{i,*,+}$, $i = 1, \dots, k$, $*, + \in \max I$, $* \neq +$, are the posets which are dominated by I and defined in Section 6.

• We denote by $c \notin I$ an element such that $I \cup \{c\} = I_i$ (resp. I^j, I_*, I_+, $I^{i,*}$, $I^{i,*,+}$).

• Let $\mathcal{X}(I) = \mathcal{X}_I \cup \mathcal{X}^I$ (see Section 6, Algorithm 6.7).

• Let $\mathcal{Y}(I)$ denote the output set of Algorithm 6.7 with input I.

• We denote by $\mathcal{SR}^+_{q_I}$ the set of all sincere positive roots of q_I.

Now we are ready to apply Algorithm 6.8 to produce a complete set of three-peak sincere posets of finite prinjective type which are iteratively dominated by 3-minimal posets. For any $i \in \{1, \dots, 90\}$, applying Algorithm 6.7, we construct the set $\mathcal{Y}(\mathcal{F}^{(3)}_i)$ of all posets min- or max-dominated by $\mathcal{F}^{(3)}_i$.

First we find the set of all 3-minimal posets. For this purpose we have to analyse [14, Tables 3.2 and 3.3] all sincere two-peak posets of finite prinjective type and sincere positive roots of their Tits forms. It is easy to check that $\mathcal{S}^{(3)} = \{\mathcal{F}^{(3)}_i : i = 1, 2, 44, 47, 54, 55, 56, 70, 73, 76, 77\}$ is the set of all 3-minimal posets.

Now we describe our procedure:

(1) Applying Algorithm 6.7 we construct all posets min- or max-dominated by the poset

$$I = \mathcal{F}^{(3)}_1 : \qquad \begin{tikzcd}[row sep=small, column sep=small] & 1 \arrow[dl] \arrow[d] \arrow[dr] & \\ *_1 & *_2 & *_3 \end{tikzcd}$$

Step 1. The set $X_1 = \{1\}$ is the only set required in Step 1 of Algorithm 6.7.

Step 2. The set $\mathcal{X}(I)$ associated with I in Step 2 of Algorithm 6.7 consists of the following posets:

$$I_1 : \begin{tikzcd}[row sep=small, column sep=small] & c \arrow[d] & \\ & 1 \arrow[dl] \arrow[d] \arrow[dr] & \\ *_1 & *_2 & *_3 \end{tikzcd} \qquad I_{*_1} : \begin{tikzcd}[row sep=small, column sep=small] c \arrow[d] & & 1 \arrow[dll] \arrow[d] \arrow[dr] & \\ *_1 & & *_2 & *_3 \end{tikzcd} \qquad I^{1,*_1} : \begin{tikzcd}[row sep=small, column sep=small] & 1 \arrow[dl] \arrow[d] \arrow[dr] & \\ c \arrow[d] & *_2 & *_3 \\ *_1 & & \end{tikzcd} \qquad I^{1,*_1,*_2} : \begin{tikzcd}[row sep=small, column sep=small] & 1 \arrow[d] \arrow[dr] & \\ & c \arrow[dl] \arrow[d] & *_3 \\ *_1 & *_2 & \end{tikzcd}$$

because $I^1 = I_1$, $I_{*_1} = I_{*_2} = I_{*_3}$, $I^{1,*_1} = I^{1,*_2} = I^{1,*_3}$ and $I^{1,*_1,*_2} = I^{1,*_2,*_3} = I^{1,*_1,*_3}$.

Step 3. It is easy to see that the set of all sincere positive roots of q_I is $\mathcal{SR}^+_{q_I} = \{z^{(1,3)}_1 = (1, 1, 1, 1), z^{(2,3)}_1 = (2, 1, 1, 1)\}$ (see Tables 8.1), where the coordinates of the vectors $z^{(i,3)}_1 = (z_1, z_{*_1}, z_{*_2}, z_{*_3})$ are indexed by elements of I.

Step 4. We note that $D_c q_{I^{1,*_1}}(z^{(1,3)}_1) = 2 \neq 1$, $D_c q_{I^{1,*_1}}(z^{(2,3)}_1) = 3 \neq 1$ and $D_c q_{I_1}(z^{(2,3)}_1) = D_c q_{I_{*_1}}(z^{(1,3)}_1) = D_c q_{I^{1,*_1,*_2}}(z^{(1,3)}_1) = 1$. The poset I_1 is of infinite prinjective type and I_{*_1}, $I^{1,*_1,*_2}$ are of finite prinjective type (see [21, Theorem 3.1]). Therefore the latter posets satisfy the conditions required in Step 4 of Algorithm 6.7 and they are all posets min- or max-dominated by I. We note that $I_{*_1} = \mathcal{F}_2^{(3)}$ and $I^{1,*_1,*_2} = \mathcal{F}_3^{(2)}$.

(2) $I = \mathcal{F}_2^{(3)}$.

STEP 1. $X_1 = \{1\}$, $X_2 = \{2\}$, $X_3 = \{1,2\}$.

STEP 2. The set $\mathcal{X}(I)$ in Step 2 of Algorithm 6.7 consists of the following posets:

I_1 : $\begin{tikzcd} & c \arrow[d] & \\ 2 \arrow[d] & 1 \arrow[dl] \arrow[d] \arrow[dr] & \\ *_1 & *_2 & *_3 \end{tikzcd}$ I_{*_1} : $\begin{tikzcd} c \arrow[dr] & 2 \arrow[d] & 1 \arrow[dl] \arrow[d] \arrow[dr] & \\ & *_1 & *_2 & *_3 \end{tikzcd}$ $I^{1,*_1}$: $\begin{tikzcd} & & 1 \arrow[dl] \arrow[d] \arrow[dr] & \\ 2 \arrow[dr] & c \arrow[d] & *_2 & *_3 \\ & *_1 & & \end{tikzcd}$ $I^{1,*_1,*_2}$: $\begin{tikzcd} & 1 \arrow[d] \arrow[dr] & \\ 2 \arrow[d] & c \arrow[dl] \arrow[d] & *_3 \\ *_1 & *_2 & \end{tikzcd}$

$I^{1,*_2}$: $\begin{tikzcd} 2 \arrow[d] & 1 \arrow[dl] \arrow[d] \arrow[dr] & \\ *_1 & c \arrow[d] & *_3 \\ & *_2 & \end{tikzcd}$ $I^{1,*_2,*_3}$: $\begin{tikzcd} 2 \arrow[d] & 1 \arrow[dl] \arrow[d] & \\ *_1 & c \arrow[d] \arrow[dr] & \\ & *_2 & *_3 \end{tikzcd}$ I_2 : $\begin{tikzcd} c \arrow[d] & & \\ 2 \arrow[d] & 1 \arrow[dl] \arrow[d] \arrow[dr] & \\ *_1 & *_2 & *_3 \end{tikzcd}$ I_{*_3} : $\begin{tikzcd} 2 \arrow[d] & 1 \arrow[dl] \arrow[d] \arrow[dr] & c \arrow[d] \\ *_1 & *_2 & *_3 \end{tikzcd}$

I_3 : $\begin{tikzcd} & c \arrow[dl] \arrow[d] & \\ 2 \arrow[d] & 1 \arrow[dl] \arrow[d] \arrow[dr] & \\ *_1 & *_2 & *_3 \end{tikzcd}$ I^3 : $\begin{tikzcd} 2 \arrow[d] & 1 \arrow[dl] \arrow[d] \arrow[dr] & \\ c \arrow[d] & *_2 & *_3 \\ *_1 & & \end{tikzcd}$

STEP 3. $\mathcal{SR}^+_{q_I} = \{z_2^{(1,3)} = (1,1,1,1,1),\ z_2^{(2,3)} = (2,1,1,1,1),\ z_2^{(3,3)} = (2,1,2,1,1)\}$ (see Tables 8.1).

STEP 4. Note that $D_c q_{I^{1,*_1}}(z_2^{(i,3)}) \neq 1$, $D_c q_{I^{1,*_1}}(z_2^{(i,3)}) \neq 1$, $D_c q_{I^3}(z_2^{(i,3)}) \neq 1$ for $i = 1,2,3$, the posets I_1, I^{*_1}, I_3 are of infinite prinjective type (see [21, Theorem 3.1]) and $D_c q_{I^{1,*_1,*_2}}(z_2^{(1,3)}) = D_c q_{I_{1,*_2,*_3}}(z_2^{(1,3)}) = D_c q_{I_2}(z_2^{(3,3)}) = D_c q_{I^{*_3}}(z_2^{(1,3)}) = 1$. The posets $I^{1,*_1,*_2} = \mathcal{F}_4^{(3)}$, $I^{1,*_2,*_3} = \mathcal{F}_5^{(3)}$, $I_2 = \mathcal{F}_6^{(3)}$, $I^{*_3} = \mathcal{F}_7^{(3)}$ satisfy the conditions in Step 4 of Algorithm 6.7 and they are all posets min- or max-dominated by the poset I.

In the remaining cases we only list the output sets $\mathcal{Y}(\mathcal{F}_i^{(3)})$, $i = 3,\ldots,90$. The procedures described above work well. The details are left to the reader. A complete proof can be obtained from the author upon request.

$\mathcal{Y}(\mathcal{F}_3^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 4,5,8\}$,
$\mathcal{Y}(\mathcal{F}_4^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 9,\ldots,13\}$,
$\mathcal{Y}(\mathcal{F}_5^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 10,13\}$,
$\mathcal{Y}(\mathcal{F}_6^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 12,14\}$,
$\mathcal{Y}(\mathcal{F}_7^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 13,14\}$,
$\mathcal{Y}(\mathcal{F}_8^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 10,15,16\}$,
$\mathcal{Y}(\mathcal{F}_9^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 17,18\}$,
$\mathcal{Y}(\mathcal{F}_{10}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 19,20,21,22\}$,
$\mathcal{Y}(\mathcal{F}_{11}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 23,24,25\}$,
$\mathcal{Y}(\mathcal{F}_{12}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 17,22,26\}$,
$\mathcal{Y}(\mathcal{F}_{13}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 25,27\}$,
$\mathcal{Y}(\mathcal{F}_{14}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 27,28\}$,
$\mathcal{Y}(\mathcal{F}_{15}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 20\}$,
$\mathcal{Y}(\mathcal{F}_{16}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 21,29,30\}$,
$\mathcal{Y}(\mathcal{F}_{17}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 31,32,33\}$,
$\mathcal{Y}(\mathcal{F}_{18}^{(3)}) = \emptyset$,
$\mathcal{Y}(\mathcal{F}_{19}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 34,35,36\}$,
$\mathcal{Y}(\mathcal{F}_{20}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 37\}$,
$\mathcal{Y}(\mathcal{F}_{21}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 38,39\}$,
$\mathcal{Y}(\mathcal{F}_{22}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 36,37\}$,

$\mathcal{Y}(\mathcal{F}_{23}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 40\}$,

$\mathcal{Y}(\mathcal{F}_{24}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 41\}$,

$\mathcal{Y}(\mathcal{F}_{25}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 40\}$,

$\mathcal{Y}(\mathcal{F}_{26}^{(3)}) = \{\mathcal{F}_i^{(3)} ; i = 33\}$,

$\mathcal{Y}(\mathcal{F}_{27}^{(3)}) = \emptyset$,

$\mathcal{Y}(\mathcal{F}_{28}^{(3)}) = \emptyset$,

$\mathcal{Y}(\mathcal{F}_{29}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 38\}$,

$\mathcal{Y}(\mathcal{F}_{30}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 42, 43\}$,

$\mathcal{Y}(\mathcal{F}_{j}^{(3)}) = \emptyset$, $j = 31, \ldots, 43$,

$\mathcal{Y}(\mathcal{F}_{44}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 8, 45, 46, 47\}$,

$\mathcal{Y}(\mathcal{F}_{45}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 16, 48, \ldots, 52\}$,

$\mathcal{Y}(\mathcal{F}_{46}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 10, 51, \ldots, 55\}$

$\mathcal{Y}(\mathcal{F}_{47}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 15, 50, 54, 56\}$,

$\mathcal{Y}(\mathcal{F}_{48}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 30, 57, \ldots, 60\}$,

$\mathcal{Y}(\mathcal{F}_{49}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 58, 61, 62, 63\}$,

$\mathcal{Y}(\mathcal{F}_{50}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 60, 63, 64, 65, 71\}$,

$\mathcal{Y}(\mathcal{F}_{51}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 29, 59, 61, 66, 67\}$,

$\mathcal{Y}(\mathcal{F}_{52}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 21, 57, 62, 64, 66, 68\}$,

$\mathcal{Y}(\mathcal{F}_{53}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 66, 69\}$,

$\mathcal{Y}(\mathcal{F}_{54}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 20, 64, 70, 71, 72\}$,

$\mathcal{Y}(\mathcal{F}_{55}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 19, 67, 69, 73, 74, 75\}$,

$\mathcal{Y}(\mathcal{F}_{56}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 63, 65, 72, 76, 77\}$,

$\mathcal{Y}(\mathcal{F}_{57}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 42\}$,

$\mathcal{Y}(\mathcal{F}_{58}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 43\}$

$\mathcal{Y}(\mathcal{F}_{59}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 78, 90\}$,

$\mathcal{Y}(\mathcal{F}_{60}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 79\}$,

$\mathcal{Y}(\mathcal{F}_{61}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 80, 90\}$,

$\mathcal{Y}(\mathcal{F}_{62}^{(3)}) = \emptyset$,

$\mathcal{Y}(\mathcal{F}_{63}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 79, 81\}$,

$\mathcal{Y}(\mathcal{F}_{64}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 39, 82\}$,

$\mathcal{Y}(\mathcal{F}_{65}^{(3)}) = \emptyset$,

$\mathcal{Y}(\mathcal{F}_{66}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 38\}$,

$\mathcal{Y}(\mathcal{F}_{67}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 78, 83\}$,

$\mathcal{Y}(\mathcal{F}_{68}^{(3)}) = \emptyset$,

$\mathcal{Y}(\mathcal{F}_{69}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 84, 86, 87\}$,

$\mathcal{Y}(\mathcal{F}_{70}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 37\}$,

$\mathcal{Y}(\mathcal{F}_{71}^{(3)}) = \emptyset$,

$\mathcal{Y}(\mathcal{F}_{72}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 82, 89\}$,

$\mathcal{Y}(\mathcal{F}_{73}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 34, 35, 83\}$,

$\mathcal{Y}(\mathcal{F}_{74}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 86\}$,

$\mathcal{Y}(\mathcal{F}_{75}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 87\}$,

$\mathcal{Y}(\mathcal{F}_{76}^{(3)}) = \{\mathcal{F}_i^{(3)} : i = 81, 88\}$,

$\mathcal{Y}(\mathcal{F}_{77}^{(3)}) = \{\mathcal{F}_i^{(3)} : yi = 89\}$,

$\mathcal{Y}(\mathcal{F}_{j}^{(3)}) = \emptyset$, $j = 78, \ldots, 90$.

It is easy to check that $\bigcup_{i=1}^{90} \mathcal{Y}(\mathcal{F}_i^{(3)})$ is the set of all posets in Tables 2.2. From the constructions and remarks given above it follows that the posets of Tables 2.2 are all the three-peak sincere posets of finite prinjective type iteratively dominated by 3-minimal posets. We note that $\mathcal{F}_{32}^{(3)}$ contains $\mathcal{F}_2''$ and that no other poset ($\neq \mathcal{F}_{32}^{(3)}$) of Tables 2.2 contains $\mathcal{F}_i$, $\mathcal{F}_i'$, or $\mathcal{F}_i''$ as a peak subposet.

Since $\mathcal{F}_{32}^{(3)}$ contains $\mathcal{F}_2''$, Lemma 7.2 does not work in this case. We consider the set $\mathcal{Y}_{32}$ of posets which are dominated (but not min- or max-dominated) by $\mathcal{F}_{32}^{(3)}$. By Lemma 7.2 and Theorem 6.3 the set $\bigcup_{i=1}^{90} \mathcal{Y}(\mathcal{F}_i^{(3)}) \cup \mathcal{Y}_{32}$ gives all sincere three-peak posets of finite prinjective type.

Consider the following three posets:

$$\begin{tikzcd}[row sep=small, column sep=small]
 & 5 \arrow[d] & & 1 \arrow[dl] \arrow[d] \arrow[dr] & \\
 & 6 \arrow[d] & 4 \arrow[dl] & 2 \arrow[d] \arrow[dr] & *_3 \\
I: & *_1 & 3 \arrow[l] & c \arrow[l] & *_2
\end{tikzcd}
\qquad
\begin{tikzcd}[row sep=small, column sep=small]
 & 5 \arrow[d] & & 1 \arrow[r] \arrow[dr] & *_3 & \\
 & 6 \arrow[dr] & 4 \arrow[d] & c \arrow[l] & 2 \arrow[l] \arrow[dl] \arrow[d] & \\
J: & & *_1 & 3 \arrow[l] & *_2 & 32
\end{tikzcd}
\qquad
\begin{tikzcd}[row sep=small, column sep=small]
 & 5 \arrow[d] & & 1 \arrow[r] \arrow[dl] \arrow[d] & *_3 & \\
 & 6 \arrow[dr] & 4 \arrow[d] & c \arrow[r] & 2 \arrow[dl] \arrow[d] & \\
P: & & *_1 & 3 \arrow[l] & *_2 & 32
\end{tikzcd}$$

Note that P is of infinite prinjective type. Moreover

$$\mathcal{SR}^+_{\mathcal{F}^{(3)}_{32}} = \{z = (1,1,1,1,1,1,3,1,1)\}$$

(see Tables 2.2 and 8.1). We can check easily that $D_c q_I(z) = D_c q_J(z) = 2 \neq 1$. Therefore $\mathcal{F}^{(3)}_{32}$ does not dominate I, J, P. Hence $\mathcal{Y}_{32} = \emptyset$. This finishes the proof of (a). ■

The results in [12], [13], [14], [15] and in the present paper provide a complete classification of sincere posets of finite prinjective type and their sincere prinjective indecomposable representations. Let us make some concluding remarks about this classification.

REMARK 7.3. (a) A complete set of 14 sincere one-peak posets of finite prinjective type and their 42 (up to isomorphism) sincere prinjective indecomposable representations was given by M. Kleiner in [12], [13] (see also [20, Theorem 10.2 and Tables 10.7] for a correction of Kleiner's list [13]). A complete set of 60 sincere two-peak posets of finite prinjective type and their 328 (up to isomorphism) sincere prinjective indecomposable representations is given in [14]. A complete set of 90 sincere three-peak posets of finite prinjective type and their 723 (up to isomorphism) sincere prinjective indecomposable representations is given in the present paper. We finish this classification in [15], where we present a complete set of sincere r-peak posets I of finite prinjective type, for $r \geq 4$, and a complete set of indecomposable modules in $\mathrm{prin}(KI)$ and their coordinate vectors. It follows that there are precisely 40 sincere 4-peak posets of finite prinjective type, and $6r+2$ sincere r-peak posets of finite prinjective type for $r \geq 5$. The total number of sincere indecomposable prinjective representations of 4-peak posets of finite prinjective type (up to isomorphism) is 364, and for any $r \geq 5$ the total number of sincere indecomposable prinjective representations of r-peak posets of finite prinjective type (up to isomorphism) is $18r - 23$.

(b) It follows from the tables in [20], [14], [15] and Tables 8.1 in the present paper that more than half of the sincere posets of finite prinjective type have only one (up to isomorphism) indecomposable sincere prinjective representation. So the corresponding Tits quadratic form has only one sincere positive root.

(c) It follows from the tables in [20], [14], [15] and Tables 8.1 in the present paper that the canonical forms of indecomposable representations of sincere posets of finite prinjective type can be represented by $\{0,1\}$-matrices. These canonical forms do not depend on the base field K. It seems that this is not accidental (see [19] and [10] for details).

(d) Let I be a sincere poset of finite prinjective type. The algebra KI is not, in general, of finite representation type. For instance $I = \mathcal{F}^{(3)}_{35}$ is of finite prinjective type, but KI is of infinite representation type.

We finish this section with a theorem which says that the algebra KI is a tilted algebra for any sincere poset I of finite prinjective type (see [18, Section 4], [9] and [26]). Recall that a connected component $\mathcal{P}$ of the Auslander–Reiten quiver $\Gamma(\mathrm{mod}(A))$ of a K-algebra A is called *preprojective* if $\mathcal{P}$ contains no oriented cycle and each point of $\mathcal{P}$ has only finitely many predecessors. Here U is a *predecessor* of V provided there is a path $U = X_0 \to X_1 \to \ldots \to X_n$ in $\mathcal{P}$ with $n \geq 0$ (see [2], [4], [18] and [20]).

THEOREM 7.4. *Let I be a sincere poset of finite prinjective type. Then the K-algebra KI is a tilted algebra. In particular* $\mathrm{gl.dim}\, KI \leq 2$.

Proof. Without loss of generality we may assume that I is connected. Let $I = \{1, \ldots, n, p_1, \ldots, p_r\}$, where $\max I = \{p_1, \ldots, p_r\}$. Moreover let $P_1, \ldots, P_n, P_{p_1}, \ldots, P_{p_r}$ be a complete set of pairwise non-isomorphic indecomposable projective KI-modules. It is easy to see that this is a complete set of pairwise non-isomorphic indecomposable prin-projective modules (i.e. projective objects in the category $\mathrm{prin}(KI)$). Denote by $Q_1^\diamond, \ldots, Q_n^\diamond$, $Q_{p_1}^\diamond, \ldots, Q_{p_r}^\diamond$ a complete set of pairwise non-isomorphic indecomposable prin-injective modules (i.e. injective objects in $\mathrm{prin}(KI)$). The reader is referred to [17] for details.

By Theorem 1.3 the Auslander–Reiten quiver $\Gamma(\mathrm{prin}(KI))$ is connected, finite and equal to its preprojective component $\widetilde{\mathcal{P}}(I)$. Therefore we can define a partial order $\to$ on the set $\{Q_1^\diamond, \ldots, Q_n^\diamond, Q_{p_1}^\diamond, \ldots, Q_{p_r}^\diamond\}$: $Q_i^\diamond \to Q_j^\diamond$ if and only if $Q_i^\diamond$ is a predecessor of $Q_j^\diamond$ in $\Gamma(\mathrm{prin}(KI)) = \widetilde{\mathcal{P}}(I)$. Moreover we can choose $i_0 \in I$ in such a way that $Q_{i_0}^\diamond$ is minimal for $\to$. Denote by $\mathcal{P}_0$ the full subquiver of $\Gamma(\mathrm{prin}(KI))$ consisting of all predecessors of $Q_{i_0}^\diamond$.

We claim that the Auslander–Reiten quiver $\Gamma(\mathrm{mod}(KI))$ has a preprojective component. Indeed, since I is of finite prinjective type it contains no subposet of the form $\mathcal{P}_{n,1}$ $(n \geq 2)$ listed in [21, Theorem 3.1]. Therefore by [4, 2.1] any point $x \in I$ is separating in the sense of [5], [4]. From [4, Theorem 2.5] it follows that $\Gamma(\mathrm{mod}(KI))$ has a preprojective component $\mathcal{P}$. Moreover there exists $i \in I$ such that P_i belongs to $\mathcal{P}$.

Since I is sincere, there exists a sincere indecomposable prinjective representation M of I. We now show that M lies on $\mathcal{P}$.

Since M is sincere, [9, Lemma 2.16] shows that $\mathrm{Hom}_{KI}(P_i, M) \neq 0$ and $\mathrm{Hom}_{KI}(M, Q_i^\diamond) \neq 0$ for any $i \in I$. In particular the modules M and P_i, for $i \in I$, belong to $\mathcal{P}_0$.

Consider the following Auslander–Reiten sequence in $\mathrm{prin}(KI)$:

$$0 \to X \to Y \to Z \to 0, \tag{7.5}$$

where X, Y, Z are in $\mathcal{P}_0$. We note that

(1) $\mathrm{Hom}_{KI}(Z, P_j) = 0$ for $j = p_1, \ldots, p_r$, because P_j are simple projective modules,

(2) $\mathrm{Hom}_{KI}(Q_j^{\diamond}, Y) = 0$ for $j = 1, \ldots, n$, by the choice of i_0.

By (1), (2) and [9, Lemma 2.17] the sequence (7.5) is an Auslander–Reiten sequence in $\mathrm{mod}(KI)$. Moreover we have shown that $M, P_i \in \mathcal{P}_0$, $i \in I$, and therefore it follows easily that all the modules M and P_i, for $i \in I$, belong to the same connected component of $\Gamma(\mathrm{mod}(KI))$. Since there exists $j \in I$ such that $P_j \in \mathcal{P}$, it follows that M and P_i, for $i \in I$, all lie on $\mathcal{P}$.

Therefore $\mathcal{P}$ is a preprojective component of $\Gamma(\mathrm{mod}(KI))$ which contains a sincere module M. By [18, 4.2], KI is a tilted algebra and $\mathrm{gl.dim}(KI) \leq 2$. ■

8. Tables of sincere prinjective modules. Below we present a set of canonical forms of sincere prinjective modules $M_i^{(j,3)}$ over the incidence algebra $K\mathcal{F}_j^{(3)}$. From Lemma 7.1 it follows that the modules $M_i^{(j,3)}$ are those modules in $\mathrm{prin}(K\mathcal{F}_i^{(3)})$ such that $\mathbf{cdn}\, M_i^{(j,3)} = z_i^{(j,3)}$ (see Tables 2.2). By Lemma 7.1 the modules $M_i^{(j,3)}$ are indecomposable. All sincere prinjective representations in Tables 8.1 are constructed by applying the methods described in the proof of Lemma 7.1.

In the tables below the K-linear maps $a, b, c, e, f, \ldots$ in the definition of $M_i^{(j,3)}$ are defined by their matrices in the standard bases. Following [20] we denote by d the K-linear map defined by the matrix of the form $[1, 1, \ldots, 1]$ (or by its transpose). Moreover the K-linear map denoted by $d_{i_1} \vee \ldots \vee d_{i_n}$ is given by the matrix whose jth column is the i_jth standard vector (see [20]). The K-linear maps denoted by $\overset{\circ}{\downarrow}$, $\overset{\circ}{\searrow}$, $\overset{\circ}{\swarrow}$, $\circ\!\!\longrightarrow$, $\longleftarrow\!\!\circ$ are defined by matrices of the form

$$\begin{bmatrix} 0 & \ldots & 0 \\ \vdots & \ddots & \vdots \\ 1 & \ldots & 0 \\ \vdots & \ddots & \vdots \\ 0 & \ldots & 1 \end{bmatrix}$$

or by their transposes. The remaining K-linear maps are defined by matrices of the form

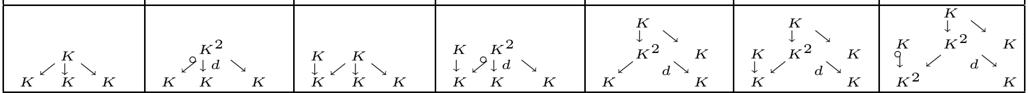
$$\begin{bmatrix} 1 & \ldots & 0 \\ \vdots & \ddots & \vdots \\ 0 & \ldots & 1 \\ \vdots & \ddots & \vdots \\ 0 & \ldots & 0 \end{bmatrix}$$

or by their transposes.

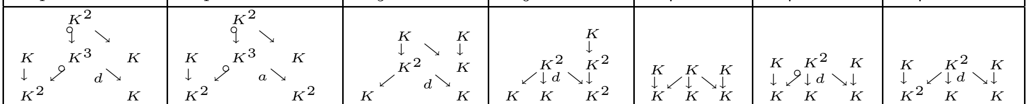
In the third row of the tables the coordinate vectors $z_i^{(j,3)}$ of the respective $K\mathcal{F}_i^{(3)}$-modules $M_i^{(j,3)}$ are given.

Tables 8.1

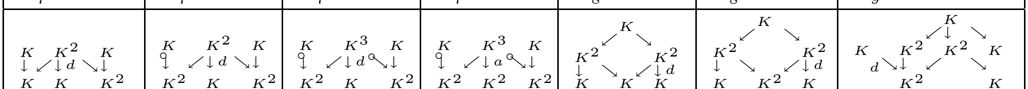
Sincere prinjective KI-modules, where
I is a sincere three-peak poset of finite prinjective type



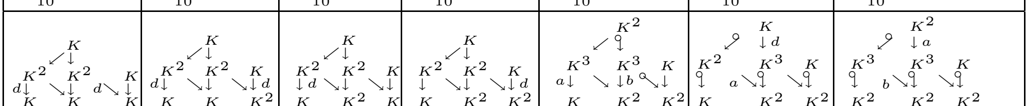
$M_1^{(1,3)}$	$M_1^{(2,3)}$	$M_2^{(1,3)}$	$M_2^{(2,3)}$	$M_3^{(1,3)}$	$M_4^{(1,3)}$	$M_4^{(2,3)}$
$\substack{1\\111}$	$\substack{2\\111}$	$\substack{11\\111}$	$\substack{12\\111}$	$\substack{1\\11\\1\ 1}$	$\substack{1\\111\\1\ 1}$	$\substack{1\\111\\2\ 1}$



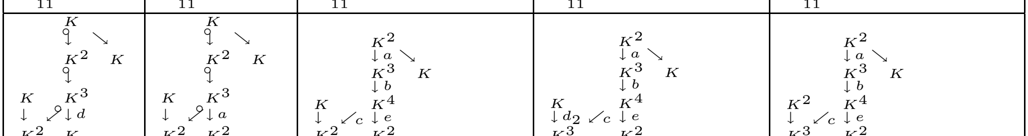
$M_4^{(3,3)}$	$M_4^{(4,3)}$	$M_5^{(1,3)}$	$M_6^{(1,3)}$	$M_7^{(1,3)}$	$M_7^{(2,3)}$	$M_7^{(3,3)}$
$\substack{2\\111\\2\ 1}$	$\substack{2\\111\\2\ 2}$	$\substack{11\\11\\1\ 1}$	$\substack{1\\21\\1\ 2}$	$\substack{111\\111}$	$\substack{121\\111}$	$\substack{121\\211}$
	$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$					



$M_7^{(4,3)}$	$M_7^{(5,3)}$	$M_7^{(6,3)}$	$M_7^{(7,3)}$	$M_8^{(1,3)}$	$M_8^{(2,3)}$	$M_9^{(1,3)}$
$\substack{121\\112}$	$\substack{121\\212}$	$\substack{131\\212}$	$\substack{131\\222}$	$\substack{1\\1\ 1\\111}$	$\substack{1\\1\ 1\\121}$	$\substack{1\\1111\\2\ 1}$
			$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$			



$M_{10}^{(1,3)}$	$M_{10}^{(2,3)}$	$M_{10}^{(3,3)}$	$M_{10}^{(4,3)}$	$M_{10}^{(5,3)}$	$M_{10}^{(6,3)}$	$M_{10}^{(7,3)}$
$\substack{1\\111\\111}$	$\substack{1\\111\\112}$	$\substack{1\\111\\121}$	$\substack{1\\111\\122}$	$\substack{2\\111\\122}$	$\substack{1\\121\\122}$	$\substack{2\\111\\222}$
				$a=[\,1\ 0\ 1\,]$ $b=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1\\0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$ $b=\begin{bmatrix}1&1&0\\0&0&1\end{bmatrix}$



$M_{11}^{(1,3)}$	$M_{11}^{(2,3)}$	$M_{11}^{(3,3)}$	$M_{11}^{(4,3)}$	$M_{11}^{(5,3)}$
$\substack{1\\11\\11\\21}$	$\substack{1\\11\\11\\22}$	$\substack{2\\11\\11\\22}$	$\substack{2\\11\\11\\32}$	$\substack{2\\11\\21\\32}$
	$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=d_1\vee d_3$ $b=d_1\vee d_2\vee d_4$ $c=d_1\vee 0\vee 0\vee d_2$ $e=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=d_1\vee d_3$ $b=d_1\vee d_2\vee d_4$ $c=d_1\vee d_2\vee 0\vee d_3$ $e=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=d_1\vee d_3$ $b=d_1\vee d_2\vee d_4$ $c=d_1\vee d_2\vee 0\vee d_3$ $e=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$

$M_{12}^{(1,3)}$	$M_{12}^{(2,3)}$	$M_{12}^{(3,3)}$	$M_{12}^{(4,3)}$	$M_{12}^{(5,3)}$	$M_{12}^{(6,3)}$	$M_{12}^{(7,3)}$
K K ⫯ ↓ ↘ K^2 K^2 K ↓ ↙ ↓d K^2 K	K K^2 ⫯ ↓ °↘ K^2 K^3 K ↓ ↙ ↓d K^2 K	K K^2 ⫯ ↓ °↘ K^2 K^3 K ↓ ↙ ↓a K^2 K^2	K K^2 ↓ ⫯ ↘ K^2 K^3 K ↓ ↙ ↓d K^3 K	K K^2 ↓ ⫯ ↘ K^2 K^3 K ↓ ↙ ↓a K^3 K^2	K K^3 ↓ ↓ ↘ K^2 K^4 K ↓ ↙ ↓a K^3 K^2	K K^2 ↓ ↓a ↘ K^2 K^4 K ↓ ↙ ↓b K^3 K^2
11 111 21	12 111 21	12 111 22	12 111 31	12 111 32	13 111 32	12 121 32
		$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$		$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=d_2\vee d_3$ $b=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$

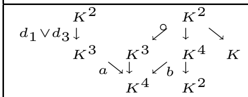
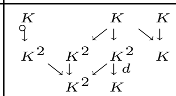
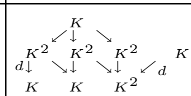
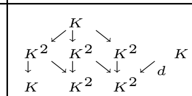
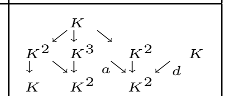
$M_{12}^{(8,3)}$	$M_{13}^{(1,3)}$	$M_{13}^{(2,3)}$	$M_{13}^{(3,3)}$	$M_{13}^{(4,3)}$	$M_{13}^{(5,3)}$	$M_{13}^{(6,3)}$
K K^3 ↓ ↓ ↘ K^2 K^4 K^2 ↓ ↙ ↓a K^3 K^2	K K ↓ ↘↓ K K^2 K ↓ ↙ ↓d K K	K K ↓ ↘↓ K K^2 K ⫯ ↙ ↓d K^2 K	K^2 K ⫯ ↘↓ K K^3 K ↓ °↙ ↓d K^2 K	K^2 K ⫯ ↘↓ K K^3 K ↓ °↙ ↓a K^2 K^2	K^2 K ⫯ ↘⫯ K K^3 K^2 ↓ °↙ ↓d K^2 K	K^2 K ⫯ ↘⫯ K K^3 K^2 ↓ °↙ ↓a K^2 K^2
13 112 32	11 111 11	11 111 21	21 111 21	21 111 22	21 112 21	21 112 22
$a=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$				$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$		$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$

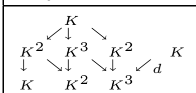
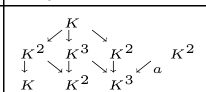
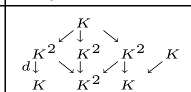
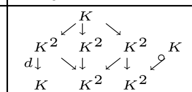
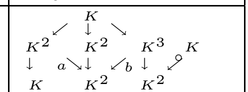
$M_{13}^{(7,3)}$	$M_{13}^{(8,3)}$	$M_{13}^{(9,3)}$	$M_{14}^{(1,3)}$	$M_{14}^{(2,3)}$	$M_{14}^{(3,3)}$	$M_{14}^{(4,3)}$
K^3 K ↓a ↘↓ K K^4 K^2 ↓ ↙b ↓c K^2 K^2	K^3 K ↓a ↘↓ K K^4 K^2 d_2↓ ↙b ↓c K^3 K^2	K^3 K ↓a ↘↓ K^2 K^4 K^2 ↓ ↙b ↓c K^3 K^2	K ↓ K^2 K^2 K ↓ ↙ ↓d ↘↓ K^2 K K	K ↓ K^2 K^2 K ↓ ↙ ↓d ↘⫯ K^2 K K^2	K ⫯ K^2 K^3 K ↓ ↙ ↓d °↘↓ K^2 K K^2	K ⫯ K^2 K^3 K ↓ ↙ ↓a °↘↓ K^2 K^2 K^2
31 112 22	31 112 32	31 212 32	1 121 211	1 121 212	1 131 212	1 131 222
$a=d_1\vee d_2\vee d_4$ $b=d_1\vee 0\vee 0\vee d_2$ $c=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=d_1\vee d_2\vee d_4$ $b=d_1\vee d_2\vee 0\vee d_3$ $c=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=d_1\vee d_2\vee d_4$ $b=d_1\vee d_2\vee 0\vee d_3$ $c=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$				$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$

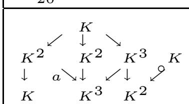
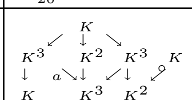
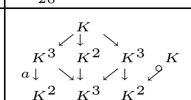
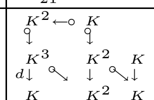
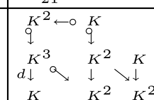
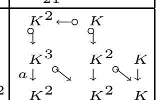
$M_{14}^{(5,3)}$	$M_{14}^{(6,3)}$	$M_{14}^{(7,3)}$	$M_{14}^{(8,3)}$	$M_{14}^{(9,3)}$	$M_{15}^{(1,3)}$	$M_{16}^{(1,3)}$
K ↓ K^2 K^3 K ↓ ↙ ↓d ↘⫯ K^3 K K^2	K ↓ K^2 K^3 K ↓ ↙ ↓a ↘⫯ K^3 K^2 K^2	K ↓ K^2 K^4 K ↓ ↙ ↓a b↘↓ K^3 K^2 K^2	K ↓ K^2 K^4 K ↓ ↙ ↓a b↘ ↓d_2 K^3 K^2 K^3	K ↓ K^2 K^4 K^2 ↓ ↙ ↓a b↘↓ K^3 K^2 K^3	K ↙↓ ↘ K^2 K^2 K^2 ↓ ↘↓ ↙↓d K K^2 K	K^2 ←° K ⫯ ⫯ K^3 K^2 d↓ °↘ ↓ °↘ K K^2 K
1 131 312	1 131 322	1 141 322	1 141 323	1 142 323	1 111 121	11 11 121
	$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$ $b=d_1\vee 0\vee 0\vee d_2$	$a=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$		

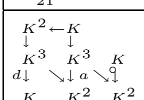
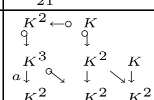
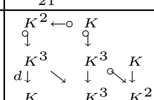
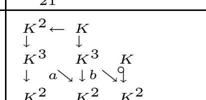
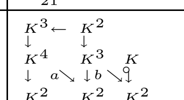
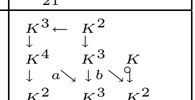
$M_{16}^{(2,3)}$	$M_{17}^{(1,3)}$	$M_{17}^{(2,3)}$	$M_{17}^{(3,3)}$	$M_{17}^{(4,3)}$
K^2 ←° K ⫯ ⫯ K^3 K^2 a↓ °↘ ↓ °↘ K^2 K^2 K	K K ⫯ ↙↓ ↘ K^2 K^2 K^2 K ↘↓ ↙↓d K^2 K	K K ⫯ ↙ ↓ ↘ K^2 K^2 K^2 K °↘↓ ↙a ↓ K^3 K	K K ⫯ ↙ ↓ ↘ K^2 K^2 K^3 K °↘↓ ↙a ↓ K^3 K	K K^2 ↓ °↙ ⫯ ↘ K^2 K^3 K^3 K ↘↓ ↙ ↓d K^3 K
11 11 221	1 1 1111 21	1 1 1111 31	1 1 1121 31	1 2 1111 31
$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$		$a=\begin{bmatrix}1&1\\0&1\\0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&1\\0&1&0\\0&0&1\end{bmatrix}$	

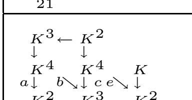
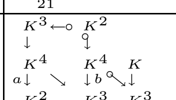
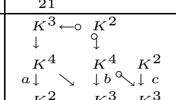
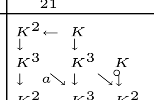
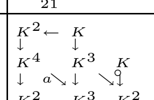
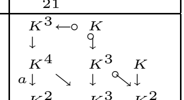
$M_{17}^{(5,3)}$	$M_{17}^{(6,3)}$	$M_{17}^{(7,3)}$	$M_{17}^{(8,3)}$	$M_{17}^{(9,3)}$
K K ⫯ ↙↓ ↘ K^2 K^2 K^3 K °↘↓ ↙↓a K^3 K^2	K K^2 ↓ °↙ ↓ ↘ K^2 K^3 K^3 K ↘↓ ↙a ↓b K^3 K^2	K K^2 ↓ °↙ ↓ ↘ K^2 K^3 K^4 K ↘↓ ↙a ↓ K^3 K^2	K K^2 ⫯ °↙ ↓ ↘ K^2 K^3 K^4 K a↘↓ ↙b ↓ K^4 K^2	K K^2 ⫯ °↙ ↓ ↘ K^3 K^3 K^4 K a↘↓ ↙b ↓ K^4 K^2
1 1 1121 32	1 2 1111 32	1 2 1121 32	1 2 1121 42	1 2 2121 42
$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}0&0&1\\1&0&0\\0&1&0\end{bmatrix}$ $b=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}0&0&1&1\\1&0&1&0\\0&1&0&1\end{bmatrix}$	$a=d_1\vee d_4$ $b=\begin{bmatrix}0&0&0&1\\1&0&1&1\\0&1&0&1\\0&0&1&0\end{bmatrix}$	$a=d_1\vee d_2\vee d_4$ $b=\begin{bmatrix}0&0&1&1\\1&0&1&0\\0&1&0&1\\0&0&1&0\end{bmatrix}$

$M_{17}^{(10,3)}$	$M_{18}^{(1,3)}$	$M_{19}^{(1,3)}$	$M_{19}^{(2,3)}$	$M_{19}^{(3,3)}$
				
2 2 1121 42	1 11 1111 21	1 1111 112	1 1111 122	1 1211 122
$a=d_1\vee d_2\vee d_4$ $b=\begin{bmatrix}0&0&0&1\\1&0&1&1\\0&1&0&1\\0&0&1&0\end{bmatrix}$				$a=d_1\vee d_1\vee d_2$

$M_{19}^{(4,3)}$	$M_{19}^{(5,3)}$	$M_{20}^{(1,3)}$	$M_{20}^{(2,3)}$	$M_{20}^{(3,3)}$
				
1 1211 123	1 1212 123	1 1111 121	1 1111 122	1 1121 122
	$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$			$a=\begin{bmatrix}1&1\\0&1\end{bmatrix}$ $b=d_1\vee d_1\vee d_2$

$M_{20}^{(4,3)}$	$M_{20}^{(5,3)}$	$M_{20}^{(6,3)}$	$M_{21}^{(1,3)}$	$M_{21}^{(2,3)}$	$M_{21}^{(3,3)}$
					
1 1121 132	1 2121 132	1 2121 232	11 111 121	11 111 122	11 111 221
$a=\begin{bmatrix}1&1\\0&1\\0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&1\\0&1&0\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$			$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$

$M_{21}^{(4,3)}$	$M_{21}^{(5,3)}$	$M_{21}^{(6,3)}$	$M_{21}^{(7,3)}$	$M_{21}^{(8,3)}$	$M_{21}^{(9,3)}$
					
11 121 122	11 111 222	11 121 132	11 121 222	12 111 222	12 111 232
$a=\begin{bmatrix}1&1&0\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$		$a=\begin{bmatrix}1&0&1\\0&1&1\end{bmatrix}$ $b=\begin{bmatrix}1&1&0\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&1&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0&1\\0&1&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&1&1\\0&1&0&0\\0&0&1&0\end{bmatrix}$ $b=\begin{bmatrix}1&0&0\\0&1&1\\0&0&1\end{bmatrix}$

$M_{21}^{(10,3)}$	$M_{21}^{(11,3)}$	$M_{21}^{(12,3)}$	$M_{21}^{(13,3)}$	$M_{21}^{(14,3)}$	$M_{21}^{(15,3)}$
					
12 121 232	12 121 233	12 122 233	11 121 232	11 221 232	21 121 232
$a=d_1\vee d_2\vee d_2\vee d_1$ $b=d_1\vee d_2\vee d_3\vee d_2$ $c=\begin{bmatrix}1&0&1&0\\0&1&0&1\\0&0&1&0\end{bmatrix}$ $e=d_1\vee d_2\vee d_2\vee 0$	$a=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_2\vee d_3$	$a=\begin{bmatrix}0&1&0&1\\1&0&1&0\end{bmatrix}$ $c=\begin{bmatrix}1&0\\0&1\\0&1\end{bmatrix}$ $b=d_1\vee d_2\vee d_2\vee d_3$	$a=\begin{bmatrix}1&0&1\\0&1&1\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&1&1\\0&1&1&0\\0&0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$

$M_{22}^{(1,3)}$	$M_{22}^{(2,3)}$	$M_{22}^{(3,3)}$	$M_{22}^{(4,3)}$	$M_{22}^{(5,3)}$	$M_{22}^{(6,3)}$
$\begin{array}{ccc} & K & K\\ & \swarrow\downarrow & \downarrow d\\ K^2 & K^2 & K^2\\ d\downarrow & \searrow\downarrow & \searrow\downarrow\\ K & K & K^2\end{array}$	$\begin{array}{ccc} & K & K\\ & \swarrow\downarrow & \downarrow\\ K^2 & K^2 & K^2\\ d\downarrow & \searrow\downarrow & \searrow\downarrow\\ K & K^2 & K^2\end{array}$	$\begin{array}{ccc} & K^2 & K\\ & \swarrow\downarrow & \downarrow\\ K^3 & K^3 & K^2\\ \downarrow & \searrow\downarrow a & \searrow\downarrow\\ K & K^2 & K^2\end{array}$	$\begin{array}{ccc} & K & K\\ & \swarrow\downarrow d & \downarrow\\ K^2 & K^3 & K^2\\ \downarrow & a\searrow\downarrow & \searrow\downarrow\\ K & K^2 & K^2\end{array}$	$\begin{array}{ccc} & K^2 & K\\ & \swarrow\downarrow a & \downarrow\\ K^3 & K^3 & K^2\\ \downarrow & b\searrow\downarrow & \searrow\downarrow\\ K^2 & K^2 & K^2\end{array}$	$\begin{array}{ccc} & K^2 & K\\ & \swarrow\downarrow a & \downarrow\\ K^3 & K^3 & K^2\\ d\downarrow & b\searrow\downarrow & \searrow\downarrow\\ K & K^2 & K^3\end{array}$
$\begin{smallmatrix}11\\111\\112\end{smallmatrix}$	$\begin{smallmatrix}11\\111\\122\end{smallmatrix}$	$\begin{smallmatrix}21\\111\\122\end{smallmatrix}$	$\begin{smallmatrix}11\\121\\122\end{smallmatrix}$	$\begin{smallmatrix}21\\111\\222\end{smallmatrix}$	$\begin{smallmatrix}21\\111\\123\end{smallmatrix}$
		$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1\\1&0\end{bmatrix}$	$a=\begin{bmatrix}0&1\\1&0\\1&1\end{bmatrix}$ $b=\begin{bmatrix}1&0&1\\1&1&0\end{bmatrix}$	$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$ $b=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$

$M_{22}^{(7,3)}$	$M_{22}^{(8,3)}$	$M_{22}^{(9,3)}$	$M_{22}^{(10,3)}$	$M_{22}^{(11,3)}$	$M_{22}^{(12,3)}$
$\begin{array}{ccc} & K & K\\ & \swarrow\downarrow d & \downarrow\\ K^2 & K^3 & K^2\\ \downarrow & a\searrow\downarrow & \searrow\downarrow\\ K & K^2 & K^3\end{array}$	$\begin{array}{ccc} & K^2 & K\\ & \swarrow\downarrow a & \downarrow\\ K^3 & K^3 & K^2\\ \downarrow & b\searrow\downarrow & \searrow\downarrow\\ K^2 & K^2 & K^3\end{array}$	$\begin{array}{ccc} & K^2 & K\\ & \swarrow\downarrow a & \downarrow\\ K^3 & K^4 & K^2\\ b\downarrow & c\searrow\downarrow e & \searrow\downarrow\\ K & K^2 & K^3\end{array}$	$\begin{array}{ccc} & K^3 & K\\ & \swarrow a\downarrow b & \downarrow\\ K^4 & K^4 & K^2\\ \downarrow & c\searrow\downarrow e & \searrow\downarrow\\ K^2 & K^2 & K^3\end{array}$	$\begin{array}{ccc} & K^2 & K\\ & \swarrow\downarrow a & \downarrow\\ K^3 & K^4 & K^2\\ \downarrow & b\searrow\downarrow c & \searrow\downarrow\\ K^2 & K^2 & K^3\end{array}$	$\begin{array}{ccc} & K^2 & K\\ & \swarrow\downarrow a & \downarrow\\ K^3 & K^4 & K^2\\ d\downarrow & b\searrow\downarrow c & \searrow\downarrow\\ K & K^3 & K^3\end{array}$
$\begin{smallmatrix}11\\121\\123\end{smallmatrix}$	$\begin{smallmatrix}21\\111\\223\end{smallmatrix}$	$\begin{smallmatrix}21\\121\\123\end{smallmatrix}$	$\begin{smallmatrix}31\\111\\223\end{smallmatrix}$	$\begin{smallmatrix}21\\121\\223\end{smallmatrix}$	$\begin{smallmatrix}21\\121\\133\end{smallmatrix}$
$a=\begin{bmatrix}1&0\\1&1\end{bmatrix}$	$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$ $b=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=[101]$ $c=\begin{bmatrix}1&1&1\\1&0&0\end{bmatrix}$ $e=d_1\vee 0\vee 0\vee d_2$	$a=d_1\vee d_2\vee d_4$ $b=\begin{bmatrix}1&1&0\\1&0&0\\0&1&1\\1&0&0\end{bmatrix}$ $c=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$ $e=d_1\vee 0\vee 0\vee d_2$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=\begin{bmatrix}1&1&1\\1&0&0\end{bmatrix}$ $c=d_1\vee 0\vee 0\vee d_2$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=\begin{bmatrix}1&1&0\\1&0&1\\1&0&0\end{bmatrix}$ $c=d_1\vee d_2\vee 0\vee d_3$

$M_{22}^{(13,3)}$	$M_{22}^{(14,3)}$	$M_{22}^{(15,3)}$	$M_{22}^{(16,3)}$	$M_{22}^{(17,3)}$
$\begin{array}{ccc} & K^3 & K\\ & \swarrow\downarrow a & \downarrow\\ K^4 & K^4 & K^2\\ b\downarrow & c\searrow\downarrow e & \searrow\downarrow\\ K^2 & K^3 & K^3\end{array}$	$\begin{array}{ccc} & K^2 & K\\ & \swarrow\downarrow a & \downarrow\\ K^3 & K^4 & K^2\\ \downarrow & b\searrow\downarrow c & \searrow\downarrow\\ K^2 & K^3 & K^3\end{array}$	$\begin{array}{ccc} & K^2 & K\\ & \swarrow\downarrow a & \downarrow\\ K^4 & K^4 & K^2\\ \downarrow & b\searrow\downarrow c & \searrow\downarrow\\ K^2 & K^3 & K^3\end{array}$	$\begin{array}{ccc} & K^3 & K\\ & \swarrow\downarrow & \downarrow\\ K^4 & K^5 & K^2\\ a\downarrow & \searrow\downarrow & b\searrow\downarrow\\ K^2 & K^3 & K^3\end{array}$	$\begin{array}{ccc} & K^3 & K\\ & \swarrow\downarrow & \downarrow\\ K^4 & K^5 & K^2\\ a\downarrow & \searrow\downarrow & b\searrow\downarrow\\ K^2 & K^3 & K^4\end{array}$
$\begin{smallmatrix}31\\111\\233\end{smallmatrix}$	$\begin{smallmatrix}21\\121\\233\end{smallmatrix}$	$\begin{smallmatrix}21\\221\\233\end{smallmatrix}$	$\begin{smallmatrix}31\\121\\233\end{smallmatrix}$	$\begin{smallmatrix}31\\121\\234\end{smallmatrix}$
$a=\begin{bmatrix}0&1&1\\1&1&0\\0&1&0\\1&0&0\end{bmatrix}$ $b=\begin{bmatrix}1&0&0&1\\0&1&1&1\end{bmatrix}$ $c=\begin{bmatrix}0&1&1&0\\1&1&0&1\\1&0&0&0\end{bmatrix}$ $e=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=\begin{bmatrix}1&1&0\\1&0&1\\1&0&0\end{bmatrix}$ $c=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=\begin{bmatrix}0&1&1&0\\1&1&0&1\\1&0&0&0\end{bmatrix}$ $c=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}1&0&1&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}0&1&0&1&0\\1&0&1&0&0\\0&1&0&1&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&1&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}0&1&0&0&1\\0&1&0&1&0\\1&0&1&0&0\\0&1&0&1&1\end{bmatrix}$

$M_{22}^{(18,3)}$	$M_{22}^{(19,3)}$	$M_{23}^{(1,3)}$	$M_{24}^{(1,3)}$	$M_{24}^{(2,3)}$
$\begin{array}{ccc} & K^3 & K\\ & \swarrow\downarrow & \downarrow\\ K^4 & K^5 & K^3\\ a\downarrow & \searrow\downarrow & b\searrow\downarrow\\ K^2 & K^3 & K^4\end{array}$	$\begin{array}{ccc} & K^3 & K^2\\ & \swarrow\downarrow & \downarrow\\ K^4 & K^5 & K^3\\ a\downarrow & \searrow\downarrow & b\searrow\downarrow\\ K^2 & K^3 & K^4\end{array}$	$\begin{array}{cccc} & K^2 \leftarrow & K & \\ & \downarrow a & \downarrow & \searrow\\ K & K^3 & K^2 & K\\ \downarrow & \swarrow & \searrow\downarrow & \\ K^2 & & K^2 & \end{array}$	$\begin{array}{ccc} & K & \\ & \downarrow & \searrow\\ & K^2 & K\\ & \downarrow & d_1\vee d_3\\ & K^3 & \\ & \downarrow & d_1\vee d_2\vee d_4\\ K & K^4 & \\ \downarrow & \swarrow a\ \downarrow b & \\ K^2 & K^2 & \end{array}$	$\begin{array}{ccc} & K & \\ & \downarrow & \searrow\\ & K^2 & K\\ & \downarrow & d_1\vee d_3\\ & K^3 & \\ & \downarrow & d_1\vee d_2\vee d_4\\ K & K^4 & \\ a\downarrow & \swarrow b\downarrow & c\\ K^3 & K^2 & \end{array}$
$\begin{smallmatrix}31\\122\\234\end{smallmatrix}$	$\begin{smallmatrix}32\\121\\234\end{smallmatrix}$	$\begin{smallmatrix}11\\1111\\2\ \ 2\end{smallmatrix}$	$\begin{smallmatrix}1\\11\\1\\11\\22\end{smallmatrix}$	$\begin{smallmatrix}1\\11\\1\\11\\32\end{smallmatrix}$
$a=\begin{bmatrix}1&0&1&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&1&0&0&1\\0&1&0&1&0\\1&0&1&0&0\\0&1&0&1&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&1&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&1&0&0&1\\0&1&0&1&0\\1&0&1&0&0\\0&1&0&1&1\end{bmatrix}$	$a=\begin{bmatrix}0&1\\1&0\\1&1\end{bmatrix}$	$a=d_1\vee 0\vee 0\vee d_2$ $b=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=d_2$ $b=d_1\vee d_2\vee 0\vee d_3$ $c=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$

$M_{24}^{(3,3)}$	$M_{24}^{(4,3)}$	$M_{24}^{(5,3)}$	$M_{24}^{(6,3)}$
K^2 ↙ ↓ $d_1\vee d_3$ K K^3 ↓ $d_1\vee d_2\vee d_4$ K^4 ↓ $d_1\vee d_2\vee d_3\vee d_5$ K K^5 a↓ ↙b ↓ c K^3 K^2	K ↓ ↘ K^2 K ↓ $d_1\vee d_3$ K^3 ↓ $d_1\vee d_2\vee d_4$ K^2 K^4 ↓ ↙a ↓ b K^3 K^2	K^2 ↙ ↓ $d_1\vee d_3$ K K^3 ↓ $d_1\vee d_2\vee d_4$ K^4 ↓ $d_1\vee d_2\vee d_3\vee d_5$ K K^5 a↓ ↙b ↓ c K^3 K^3	K^2 ↙ ↓ $d_1\vee d_3$ K K^3 ↓ $d_1\vee d_2\vee d_4$ K^4 ↓ $d_1\vee d_2\vee d_3\vee d_5$ K^2 K^5 ↓ ↙a ↓ b K^3 K^2
2 11 1 11 32	1 11 1 21 32	2 11 1 11 33	2 11 1 21 32
$a=d_2$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$ $c=\begin{bmatrix}0&1&0&1&1\\1&1&1&0&0\end{bmatrix}$	$a=d_1\vee d_2\vee 0\vee d_3$ $b=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$	$a=d_2$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$ $c=\begin{bmatrix}0&0&0&1&1\\1&0&1&0&0\\0&1&1&1&0\end{bmatrix}$	$a=d_1\vee d_2\vee 0\vee 0\vee d_3$ $b=\begin{bmatrix}0&1&1&0&1\\1&0&1&1&0\end{bmatrix}$

$M_{24}^{(7,3)}$	$M_{24}^{(8,3)}$	$M_{24}^{(9,3)}$	$M_{24}^{(10,3)}$
K^2 ↙ ↓ $d_1\vee d_3$ K K^3 ↓ $d_1\vee d_2\vee d_4$ K^4 ↓ $d_1\vee d_2\vee d_3\vee d_5$ K^2 K^5 ↓ ↙a ↓ b K^3 K^3	K^2 ↙ ↓ $d_1\vee d_3$ K K^3 ↓ $d_1\vee d_2\vee d_4$ K^4 ↓ $d_1\vee d_2\vee d_3\vee d_5$ K^2 K^5 a↓ ↙b ↓ c K^4 K^2	K^2 ↙ ↓ $d_1\vee d_3$ K K^3 ↓ $d_1\vee d_2\vee d_4$ K^4 ↓ $d_1\vee d_2\vee d_3\vee d_5$ K^2 K^5 a↓ ↙b ↓ c K^4 K^3	K^3 ↙ ↓ $d_1\vee d_3\vee d_4$ K K^4 ↓ $d_1\vee d_2\vee d_4\vee d_5$ K^5 ↓ $d_1\vee d_2\vee d_3\vee d_5\vee d_6$ K^2 K^6 ↓ ↙a ↓ b K^4 K^3
2 11 1 21 33	2 11 1 21 42	2 11 1 21 43	3 11 1 21 43
$a=d_1\vee d_2\vee 0\vee 0\vee d_3$ $b=\begin{bmatrix}1&0&0&0&1\\0&1&1&1&0\\1&1&0&1&0\end{bmatrix}$	$a=d_2\vee d_3$ $b=d_1\vee d_2\vee d_3\vee 0\vee d_4$ $c=\begin{bmatrix}0&1&1&0&1\\1&1&0&1&0\end{bmatrix}$	$a=d_2\vee d_3$ $b=d_1\vee d_2\vee d_3\vee 0\vee d_4$ $c=\begin{bmatrix}0&0&0&1&1\\1&1&0&0&0\\0&1&1&1&0\end{bmatrix}$	$a=d_1\vee d_2\vee 0\vee 0\vee d_3\vee d_4$ $b=\begin{bmatrix}1&0&0&0&0&1\\0&1&0&1&1&0\\1&1&1&0&0&0\end{bmatrix}$

$M_{24}^{(11,3)}$	$M_{24}^{(12,3)}$	$M_{24}^{(13,3)}$	$M_{24}^{(14,3)}$
K^2 ↙ ↓ $d_1\vee d_3$ K K^3 ↓ $d_1\vee d_2\vee d_4$ K^4 ↓ $d_1\vee d_2\vee d_3\vee d_6$ K^2 K^6 a↓ ↙b ↓ c K^4 K^3	K^2 ↙ ↓ $d_1\vee d_3$ K K^3 ↓ $d_1\vee d_2\vee d_5$ K^5 ↓ $d_1\vee d_2\vee d_3\vee d_4\vee d_6$ K^2 K^6 a↓ ↙b ↓ c K^4 K^3	K^2 ↙ ↓ $d_1\vee d_4$ K K^4 ↓ $d_1\vee d_2\vee d_3\vee d_5$ K^5 ↓ $d_1\vee d_2\vee d_3\vee d_4\vee d_6$ K^2 K^6 a↓ ↙b ↓ c K^4 K^3	K^3 ↙ ↓ $d_1\vee d_2\vee d_4$ K K^4 ↓ $d_1\vee d_2\vee d_3\vee d_5$ K^5 ↓ $d_1\vee d_2\vee d_3\vee d_4\vee d_6$ K^2 K^6 a↓ ↙b ↓ c K^4 K^3
2 11 1 22 43	2 11 2 21 43	2 21 1 21 43	3 12 1 21 43
$a=d_2\vee d_3$ $b=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$ $c=\begin{bmatrix}0&0&0&1&0&1\\1&0&1&0&1&0\\1&1&0&1&0&0\end{bmatrix}$	$a=d_2\vee d_3$ $b=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$ $c=\begin{bmatrix}0&0&0&1&0&1\\1&1&0&0&1&0\\0&1&1&1&0&0\end{bmatrix}$	$a=d_2\vee d_3$ $b=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$ $c=\begin{bmatrix}0&0&0&1&0&1\\1&0&1&1&0&0\\1&1&0&0&1&0\end{bmatrix}$	$a=d_2\vee d_3$ $b=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$ $c=\begin{bmatrix}0&0&0&1&0&1\\1&1&0&0&1&0\\0&1&1&1&0&0\end{bmatrix}$

$M_{25}^{(1,3)}$	$M_{25}^{(2,3)}$	$M_{25}^{(3,3)}$	$M_{25}^{(4,3)}$	$M_{25}^{(5,3)}$	$M_{25}^{(6,3)}$	$M_{25}^{(7,3)}$
K K ↓ ↘↓ K^2 K ↓ K K^3 ↓ ↗ ↓d K^2 K	K K ↓ ↘↓ K^2 K ↓ K K^3 ↓ ↗ ↓a K^2 K^2	K^2 K ↓a ↘↓ K^3 K ↓b K K^4 ↓ ↙c ↓e K^2 K^2	K^2 K ↓a ↘↓ K^3 K ↓b K K^4 d_2↓ ↙c ↓e K^3 K^2	K^2 K ↓a ↘↓ K^3 K^2 ↓b K K^4 ↓ ↙c ↓e K^2 K^2	K^2 K ↓a ↘↓ K^3 K ↓b K^2 K^4 ↓ ↙c ↓e K^3 K^2	K^2 K ↓a ↘↓ K^3 K^2 ↓b K K^4 d_2↓ ↙c ↓e K^3 K^2
11 11 11 21	11 11 11 22	21 11 11 22	21 11 11 32	21 12 11 22	21 11 21 32	21 12 11 32
	$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=d_1\vee d_3$ $b=d_1\vee d_2\vee d_4$ $c=d_1\vee 0\vee 0\vee d_2$ $e=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=d_1\vee d_3$ $b=d_1\vee d_2\vee d_4$ $c=d_1\vee d_2\vee 0\vee d_3$ $e=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=d_1\vee d_3$ $b=d_1\vee d_2\vee d_4$ $c=d_1\vee 0\vee 0\vee d_2$ $e=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=d_1\vee d_3$ $b=d_1\vee d_2\vee d_4$ $c=d_1\vee d_2\vee 0\vee d_3$ $e=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$	$a=d_1\vee d_3$ $b=d_1\vee d_2\vee d_4$ $c=d_1\vee d_2\vee 0\vee d_3$ $e=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$

$M_{25}^{(8,3)}$	$M_{25}^{(9,3)}$	$M_{25}^{(10,3)}$	$M_{25}^{(11,3)}$	$M_{25}^{(12,3)}$
$K^2 \quad K$ $\downarrow a \searrow \downarrow$ $K^3 \quad K^2$ $\downarrow b$ $K^2 \quad K^4$ $\downarrow \swarrow c \downarrow e$ $K^3 \quad K^2$	$K^3 \quad K$ $\downarrow a \searrow \downarrow$ $K^4 \quad K^2$ $\downarrow b$ $K \quad K^5$ $d_2\downarrow \swarrow c \downarrow e$ $K^3 \quad K^2$	$K^3 \quad K$ $\downarrow a \searrow \downarrow$ $K^4 \quad K^2$ $\downarrow b$ $K^2 \quad K^5$ $\downarrow \swarrow c \downarrow e$ $K^3 \quad K^2$	$K^3 \quad K$ $\downarrow a \searrow \downarrow$ $K^4 \quad K^2$ $\downarrow b$ $K \quad K^5$ $d_2\downarrow \swarrow c \downarrow e$ $K^3 \quad K^3$	$K^3 \quad K$ $\downarrow a \searrow \downarrow$ $K^4 \quad K^2$ $\downarrow b$ $K^2 \quad K^5$ $d_2\vee d_3\downarrow \swarrow c \downarrow e$ $K^4 \quad K^2$
21 12 21 32	31 12 11 32	31 12 21 32	31 12 11 33	31 12 21 42
$a=d_1\vee d_3$ $b=d_1\vee d_2\vee d_4$ $c=d_1\vee d_2\vee 0\vee d_3$ $e=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$	$a=d_1\vee d_2\vee d_4$ $b=d_1\vee d_2\vee d_3\vee d_5$ $c=d_1\vee d_2\vee 0\vee 0\vee d_3$ $e=\begin{bmatrix}0&1&0&1&1\\1&1&1&0&0\end{bmatrix}$	$a=d_1\vee d_2\vee d_4$ $b=d_1\vee d_2\vee d_3\vee d_5$ $c=d_1\vee d_2\vee 0\vee 0\vee d_3$ $e=\begin{bmatrix}0&1&1&0&1\\1&0&1&1&0\end{bmatrix}$	$a=d_1\vee d_2\vee d_4$ $b=d_1\vee d_2\vee d_3\vee d_5$ $c=d_1\vee d_2\vee 0\vee 0\vee d_3$ $e=\begin{bmatrix}0&0&0&1&1\\1&0&1&0&0\\0&1&1&1&0\end{bmatrix}$	$a=d_1\vee d_2\vee d_4$ $b=d_1\vee d_2\vee d_3\vee d_5$ $c=d_1\vee d_2\vee d_3\vee 0\vee d_4$ $e=\begin{bmatrix}0&1&1&0&1\\1&1&0&1&0\end{bmatrix}$

$M_{25}^{(13,3)}$	$M_{25}^{(14,3)}$	$M_{25}^{(15,3)}$	$M_{25}^{(16,3)}$	$M_{25}^{(17,3)}$
$K^3 \quad K$ $\downarrow a \searrow \downarrow$ $K^4 \quad K^2$ $\downarrow b$ $K^2 \quad K^5$ $\downarrow \swarrow c \downarrow e$ $K^3 \quad K^3$	$K^3 \quad K$ $\downarrow a \searrow \downarrow$ $K^4 \quad K^2$ $\downarrow b$ $K^2 \quad K^5$ $d_2\vee d_3\downarrow \swarrow c \downarrow e$ $K^4 \quad K^3$	$K^4 \quad K$ $\downarrow a \searrow \downarrow$ $K^5 \quad K^2$ $\downarrow b$ $K^2 \quad K^6$ $\downarrow \swarrow c \downarrow e$ $K^4 \quad K^3$	$K^3 \quad K$ $\downarrow a \searrow \downarrow$ $K^4 \quad K^2$ $\downarrow b$ $K^2 \quad K^6$ $d_2\vee d_3\downarrow \swarrow c \downarrow e$ $K^4 \quad K^3$	$K^3 \quad K$ $\downarrow a \searrow \downarrow$ $K^5 \quad K^2$ $\downarrow b$ $K^2 \quad K^6$ $d_2\vee d_3\downarrow \swarrow c \downarrow e$ $K^4 \quad K^3$
31 12 21 33	31 12 21 43	41 12 21 43	31 12 22 43	31 22 21 43
$a=d_1\vee d_2\vee d_4$ $b=d_1\vee d_2\vee d_3\vee d_5$ $c=d_1\vee d_2\vee 0\vee 0\vee d_3$ $e=\begin{bmatrix}1&0&0&0&1\\0&1&1&1&0\\1&1&0&1&0\end{bmatrix}$	$a=d_1\vee d_2\vee d_4$ $b=d_1\vee d_2\vee d_3\vee d_5$ $c=d_1\vee d_2\vee d_3\vee 0\vee d_4$ $e=\begin{bmatrix}0&0&0&1&1\\1&1&0&0&0\\0&1&1&1&0\end{bmatrix}$	$a=d_1\vee d_2\vee d_4\vee d_5$ $b=d_1\vee d_2\vee d_3\vee d_5\vee d_6$ $c=d_1\vee d_2\vee 0\vee 0\vee d_3\vee d_4$ $e=\begin{bmatrix}1&0&0&0&0&1\\0&1&0&1&1&0\\1&1&1&0&0&0\end{bmatrix}$	$a=d_1\vee d_2\vee d_4$ $b=d_1\vee d_2\vee d_3\vee d_6$ $c=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$ $e=\begin{bmatrix}0&0&0&1&0&1\\1&0&1&0&1&0\\1&1&0&1&0&0\end{bmatrix}$	$a=d_1\vee d_2\vee d_5$ $b=d_1\vee d_2\vee d_3\vee d_4\vee d_6$ $c=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$ $e=\begin{bmatrix}0&0&0&1&0&1\\1&1&0&0&1&0\\0&1&1&1&0&0\end{bmatrix}$

$M_{25}^{(18,3)}$	$M_{25}^{(19,3)}$	$M_{26}^{(1,3)}$	$M_{26}^{(2,3)}$	$M_{26}^{(3,3)}$	$M_{26}^{(4,3)}$
$K^4 \quad K$ $\downarrow a \searrow \downarrow$ $K^5 \quad K^3$ $\downarrow b$ $K^2 \quad K^6$ $d_2\vee d_3\downarrow \swarrow c \downarrow e$ $K^4 \quad K^3$	$K^4 \quad K^2$ $\downarrow a \searrow \downarrow$ $K^5 \quad K^3$ $\downarrow b$ $K^2 \quad K^6$ $d_2\vee d_3\downarrow \swarrow c \downarrow e$ $K^4 \quad K^3$	K $\downarrow$ $K^2 \quad K^2$ $\downarrow \quad \downarrow \quad \searrow$ $K^3 \quad K^3 \quad K$ $\downarrow \swarrow \downarrow d$ $K^3 \quad K$	K $\downarrow$ $K^2 \quad K^2$ $\downarrow \quad \downarrow \quad \searrow$ $K^3 \quad K^3 \quad K$ $\downarrow \swarrow \downarrow a$ $K^3 \quad K^2$	K $\downarrow$ $K^2 \quad K^3$ $\downarrow \quad \downarrow \quad \searrow$ $K^3 \quad K^4 \quad K$ $\downarrow \swarrow \downarrow a$ $K^3 \quad K^2$	K $\downarrow$ $K^2 \quad K^2$ $\downarrow \quad \downarrow a \searrow$ $K^3 \quad K^4 \quad K$ $\downarrow \swarrow \downarrow b$ $K^3 \quad K^2$
41 13 21 43	42 13 21 43	1 12 111 31	1 12 111 32	1 13 111 32	1 12 121 32
$a=d_1\vee d_2\vee d_3\vee d_5$ $b=d_1\vee d_2\vee d_3\vee d_4\vee d_6$ $c=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$ $e=\begin{bmatrix}0&0&0&1&0&1\\1&0&1&1&0&0\\1&1&0&0&1&0\end{bmatrix}$	$a=d_1\vee d_2\vee d_3\vee d_5$ $b=d_1\vee d_2\vee d_3\vee d_4\vee d_6$ $c=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$ $e=\begin{bmatrix}0&0&0&1&0&1\\1&1&0&0&1&0\\0&1&1&1&0&0\end{bmatrix}$		$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=d_2\vee d_3$ $b=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$

$M_{26}^{(5,3)}$	$M_{26}^{(6,3)}$	$M_{26}^{(7,3)}$	$M_{26}^{(8,3)}$	$M_{26}^{(9,3)}$
K $\downarrow$ $K^2 \quad K^3$ $\downarrow \quad \downarrow \quad \searrow$ $K^3 \quad K^4 \quad K^2$ $\downarrow \swarrow \downarrow a$ $K^3 \quad K^2$	K $\downarrow$ $K^2 \quad K^3$ $d_1\vee d_3\downarrow \quad \downarrow \quad \searrow$ $K^3 \quad K^4 \quad K$ $d_1\vee d_2\vee d_4\downarrow \swarrow \downarrow a$ $K^4 \quad K^2$	K $\downarrow$ $K^2 \quad K^2$ $d_1\vee d_3\downarrow \quad \downarrow a \searrow$ $K^3 \quad K^4 \quad K$ $d_1\vee d_2\vee d_4\downarrow \swarrow \downarrow b$ $K^4 \quad K^2$	K $\downarrow$ $K^2 \quad K^3$ $d_1\vee d_3\downarrow \quad \downarrow \quad \searrow$ $K^3 \quad K^4 \quad K^2$ $d_1\vee d_2\vee d_4\downarrow \swarrow \downarrow a$ $K^4 \quad K^2$	K $\downarrow$ $K^2 \quad K^3$ $\downarrow \quad \downarrow a \searrow$ $K^3 \quad K^5 \quad K$ $\downarrow \swarrow \downarrow b$ $K^4 \quad K^2$
1 13 112 32	1 13 111 42	1 12 121 42	1 13 112 42	1 13 121 42
$a=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$	$a=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=d_2\vee d_3$ $b=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$	$a=d_2\vee d_3\vee d_4$ $b=\begin{bmatrix}0&1&0&1&1\\1&1&1&0&0\end{bmatrix}$

$M_{26}^{(10,3)}$	$M_{26}^{(11,3)}$	$M_{26}^{(12,3)}$	$M_{26}^{(13,3)}$	$M_{26}^{(14,3)}$	$M_{26}^{(15,3)}$	$M_{26}^{(16,3)}$
$\begin{array}{lllll} K &&&& \\ \downarrow &&&& \\ K^2 && K^4 && \\ \downarrow && \downarrow & \searrow & \\ K^3 && K^5 && K^2 \\ \downarrow & \swarrow & \downarrow a && \\ K^4 && K^2 && \end{array}$	$\begin{array}{lllll} K &&&& \\ \downarrow &&&& \\ K^2 && K^3 && \\ \downarrow && \downarrow a & \searrow & \\ K^3 && K^5 && K^2 \\ \downarrow & \swarrow & \downarrow b && \\ K^4 && K^2 && \end{array}$	$\begin{array}{lllll} K &&&& \\ \downarrow &&&& \\ K^2 && K^3 && \\ \downarrow && \downarrow a & \searrow & \\ K^3 && K^5 && K \\ \downarrow & \swarrow & \downarrow b && \\ K^4 && K^3 && \end{array}$	$\begin{array}{lllll} K &&&& \\ \downarrow &&&& \\ K^2 && K^4 && \\ \downarrow && \downarrow & \searrow & \\ K^3 && K^5 && K^2 \\ \downarrow & \swarrow & \downarrow a && \\ K^4 && K^3 && \end{array}$	$\begin{array}{lllll} K &&&& \\ \downarrow &&&& \\ K^2 && K^3 && \\ \downarrow && \downarrow a & \searrow & \\ K^3 && K^5 && K^2 \\ \downarrow & \swarrow & \downarrow b && \\ K^4 && K^3 && \end{array}$	$\begin{array}{lllll} K &&&& \\ \downarrow &&&& \\ K^2 && K^4 && \\ \downarrow && \downarrow & \searrow & \\ K^3 && K^6 && K^2 \\ \downarrow & \swarrow & \downarrow a && \\ K^4 && K^3 && \end{array}$	$\begin{array}{lllll} K &&&& \\ \downarrow &&&& \\ K^2 && K^4 && \\ \downarrow && \downarrow a & \searrow & \\ K^3 && K^6 && K^2 \\ \downarrow & \swarrow & \downarrow b && \\ K^5 && K^3 && \end{array}$
$\begin{array}{l} 1 \\ 14 \\ 112 \\ 42 \end{array}$	$\begin{array}{l} 1 \\ 13 \\ 122 \\ 42 \end{array}$	$\begin{array}{l} 1 \\ 13 \\ 121 \\ 43 \end{array}$	$\begin{array}{l} 1 \\ 14 \\ 112 \\ 43 \end{array}$	$\begin{array}{l} 1 \\ 13 \\ 122 \\ 43 \end{array}$	$\begin{array}{l} 1 \\ 14 \\ 122 \\ 43 \end{array}$	$\begin{array}{l} 1 \\ 14 \\ 122 \\ 53 \end{array}$
$a=\begin{bmatrix} 0&1&1&0&1 \\ 1&0&1&1&0 \end{bmatrix}$	$a=d_2\vee d_3\vee d_4$ $b=\begin{bmatrix} 0&1&1&0&1 \\ 1&1&0&1&0 \end{bmatrix}$	$a=d_2\vee d_3\vee d_4$ $b=\begin{bmatrix} 0&0&0&1&1 \\ 1&0&1&0&0 \\ 0&1&1&1&0 \end{bmatrix}$	$a=\begin{bmatrix} 1&0&0&0&1 \\ 0&1&1&1&0 \\ 1&1&0&1&0 \end{bmatrix}$	$a=d_2\vee d_3\vee d_4$ $b=\begin{bmatrix} 0&0&0&1&1 \\ 1&1&0&0&0 \\ 0&1&1&1&0 \end{bmatrix}$	$a=\begin{bmatrix} 1&0&0&0&0&1 \\ 0&1&0&1&1&0 \\ 1&1&1&0&0&0 \end{bmatrix}$	$a=d_2\vee d_3\vee d_4\vee d_5$ $b=\begin{bmatrix} 0&0&0&1&0&1 \\ 1&0&1&0&1&0 \\ 1&1&0&1&0&0 \end{bmatrix}$

$M_{26}^{(17,3)}$	$M_{26}^{(18,3)}$	$M_{26}^{(19,3)}$	$M_{27}^{(1,3)}$	$M_{27}^{(2,3)}$	$M_{27}^{(3,3)}$
$\begin{array}{lllll} K &&&& \\ \downarrow &&&& \\ K^2 && K^4 && \\ \downarrow && \downarrow a & \searrow & \\ K^4 && K^6 && K^2 \\ \downarrow & \swarrow & \downarrow b && \\ K^5 && K^3 && \end{array}$	$\begin{array}{lllll} K &&&& \\ \downarrow &&&& \\ K^3 && K^4 && \\ \downarrow && \downarrow a & \searrow & \\ K^4 && K^6 && K^2 \\ \downarrow & \swarrow & \downarrow b && \\ K^5 && K^3 && \end{array}$	$\begin{array}{lllll} K^2 &&&& \\ \downarrow &&&& \\ K^3 && K^4 && \\ \downarrow && \downarrow a & \searrow & \\ K^4 && K^6 && K^2 \\ \downarrow & \swarrow & \downarrow b && \\ K^5 && K^3 && \end{array}$	$\begin{array}{ccccc} &&&& K \\ &&&& \overset{\circ}{\downarrow} \\ && K^2 && K^2 \\ && \overset{\circ}{\downarrow} & \searrow & \downarrow \\ K && K^3 && K^2 \\ \downarrow & \overset{\circ}{\swarrow} && d\searrow & \\ K^2 &&&& K \end{array}$	$\begin{array}{ccccc} &&&& K \\ &&&& \overset{\circ}{\downarrow} \\ && K^2 && K^2 \\ && \overset{\circ}{\downarrow} & \searrow & \downarrow \\ K && K^3 && K^2 \\ \downarrow & \overset{\circ}{\swarrow} && a\searrow & \\ K^2 &&&& K^2 \end{array}$	$\begin{array}{ccccc} &&&& K \\ &&&& \downarrow \\ && K^3 && K^2 \\ && \downarrow a & \searrow & \downarrow \\ K && K^4 && K^2 \\ \downarrow & \swarrow b && c\searrow & \\ K^2 &&&& K^2 \end{array}$
$\begin{array}{l} 1 \\ 14 \\ 222 \\ 53 \end{array}$	$\begin{array}{l} 1 \\ 24 \\ 122 \\ 53 \end{array}$	$\begin{array}{l} 2 \\ 14 \\ 122 \\ 53 \end{array}$	$\begin{array}{ccc} &&1 \\ &2&1 \\ 1&1&2 \\ 2&&1 \end{array}$	$\begin{array}{ccc} &&1 \\ &2&1 \\ 1&1&2 \\ 2&&2 \end{array}$	$\begin{array}{ccc} &&1 \\ &3&1 \\ 1&1&2 \\ 2&&2 \end{array}$
$a=d_2\vee d_3\vee d_4\vee d_5$ $b=\begin{bmatrix} 0&0&0&1&0&1 \\ 1&1&0&0&1&0 \\ 0&1&1&1&0&0 \end{bmatrix}$	$a=d_2\vee d_3\vee d_4\vee d_5$ $b=\begin{bmatrix} 0&0&0&1&0&1 \\ 1&0&1&1&0&0 \\ 1&1&0&0&1&0 \end{bmatrix}$	$a=d_2\vee d_3\vee d_4\vee d_5$ $b=\begin{bmatrix} 0&0&0&1&0&1 \\ 1&1&0&0&1&0 \\ 0&1&1&1&0&0 \end{bmatrix}$		$a=\begin{bmatrix} 1&1&0 \\ 1&0&1 \end{bmatrix}$	$a=d_1\vee d_2\vee d_4$ $b=d_1\vee 0\vee 0\vee d_2$ $c=\begin{bmatrix} 0&1&0&1 \\ 1&1&1&0 \end{bmatrix}$

$M_{27}^{(4,3)}$	$M_{27}^{(5,3)}$	$M_{27}^{(6,3)}$	$M_{27}^{(7,3)}$	$M_{27}^{(8,3)}$
$\begin{array}{ccccc} &&&& K \\ &&&& \downarrow \\ && K^3 && K^2 \\ && \downarrow a & \searrow & \downarrow \\ K && K^4 && K^2 \\ d_2\downarrow & \swarrow b && c\searrow & \\ K^3 &&&& K^2 \end{array}$	$\begin{array}{ccccc} &&&& K \\ &&&& \overset{\circ}{\downarrow} \\ && K^3 && K^2 \\ && \downarrow a & \searrow & \downarrow\ d_1\vee d_3 \\ K && K^4 && K^3 \\ \downarrow & \swarrow b && c\searrow & \\ K^2 &&&& K^2 \end{array}$	$\begin{array}{ccccc} &&&& K \\ &&&& \downarrow \\ && K^3 && K^2 \\ && \downarrow a & \searrow & \downarrow \\ K^2 && K^4 && K^2 \\ \downarrow & \swarrow b && c\searrow & \\ K^3 &&&& K^2 \end{array}$	$\begin{array}{ccccc} &&&& K \\ &&&& \overset{\circ}{\downarrow} \\ && K^3 && K^2 \\ && \downarrow a & \searrow & \downarrow\ d_1\vee d_3 \\ K && K^4 && K^3 \\ d_2\downarrow & \swarrow b && c\searrow & \\ K^3 &&&& K^2 \end{array}$	$\begin{array}{ccccc} &&&& K \\ &&&& \overset{\circ}{\downarrow} \\ && K^3 && K^2 \\ && \downarrow a & \searrow & \downarrow\ d_1\vee d_3 \\ K^2 && K^4 && K^3 \\ \downarrow & \swarrow b && c\searrow & \\ K^3 &&&& K^2 \end{array}$
$\begin{array}{ccc} &&1 \\ &3&1 \\ 1&1&2 \\ 3&&2 \end{array}$	$\begin{array}{ccc} &&1 \\ &3&1 \\ 1&1&3 \\ 2&&2 \end{array}$	$\begin{array}{ccc} &&1 \\ &3&1 \\ 2&1&2 \\ 3&&2 \end{array}$	$\begin{array}{ccc} &&1 \\ &3&1 \\ 1&1&3 \\ 3&&2 \end{array}$	$\begin{array}{ccc} &&1 \\ &3&1 \\ 2&1&3 \\ 3&&2 \end{array}$
$a=d_1\vee d_2\vee d_4$ $b=d_1\vee d_2\vee 0\vee d_3$ $c=\begin{bmatrix} 0&1&0&1 \\ 1&1&1&0 \end{bmatrix}$	$a=d_1\vee d_2\vee d_4$ $b=d_1\vee 0\vee 0\vee d_2$ $c=\begin{bmatrix} 0&1&0&1 \\ 1&1&1&0 \end{bmatrix}$	$a=d_1\vee d_2\vee d_4$ $b=d_1\vee d_2\vee 0\vee d_3$ $c=\begin{bmatrix} 1&1&0&1 \\ 1&0&1&0 \end{bmatrix}$	$a=d_1\vee d_2\vee d_4$ $b=d_1\vee d_2\vee 0\vee d_3$ $c=\begin{bmatrix} 0&1&0&1 \\ 1&1&1&0 \end{bmatrix}$	$a=d_1\vee d_2\vee d_4$ $b=d_1\vee d_2\vee 0\vee d_3$ $c=\begin{bmatrix} 1&1&0&1 \\ 1&0&1&0 \end{bmatrix}$

$M_{27}^{(9,3)}$	$M_{27}^{(10,3)}$	$M_{27}^{(11,3)}$	$M_{27}^{(12,3)}$	$M_{27}^{(13,3)}$
$\begin{array}{ccccc} &&&& K \\ &&&& \downarrow \\ && K^4 && K^2 \\ && \downarrow a & \searrow & \downarrow \\ K && K^5 && K^3 \\ d_2\downarrow & \swarrow b && c\searrow & \\ K^3 &&&& K^2 \end{array}$	$\begin{array}{ccccc} &&&& K \\ &&&& \downarrow \\ && K^4 && K^2 \\ && \downarrow a & \searrow & \downarrow \\ K^2 && K^5 && K^3 \\ \downarrow & \swarrow b && c\searrow & \\ K^3 &&&& K^2 \end{array}$	$\begin{array}{ccccc} &&&& K \\ &&&& \downarrow \\ && K^4 && K^2 \\ && \downarrow a & \searrow & \downarrow \\ K && K^5 && K^3 \\ d_2\downarrow & \swarrow b && c\searrow & \\ K^3 &&&& K^3 \end{array}$	$\begin{array}{ccccc} &&&& K \\ &&&& \downarrow \\ && K^4 && K^2 \\ && \downarrow a & \searrow & \downarrow \\ K^2 && K^5 && K^3 \\ d_2\vee d_3\downarrow & \swarrow b && c\searrow & \\ K^4 &&&& K^2 \end{array}$	$\begin{array}{ccccc} &&&& K \\ &&&& \downarrow \\ && K^4 && K^2 \\ && \downarrow a & \searrow & \downarrow \\ K^2 && K^5 && K^3 \\ \downarrow & \swarrow b && c\searrow & \\ K^3 &&&& K^3 \end{array}$
$\begin{array}{ccc} &&1 \\ &4&1 \\ 1&1&3 \\ 3&&2 \end{array}$	$\begin{array}{ccc} &&1 \\ &4&1 \\ 2&1&3 \\ 3&&2 \end{array}$	$\begin{array}{ccc} &&1 \\ &4&1 \\ 1&1&3 \\ 3&&3 \end{array}$	$\begin{array}{ccc} &&1 \\ &4&1 \\ 2&1&3 \\ 4&&2 \end{array}$	$\begin{array}{ccc} &&1 \\ &4&1 \\ 2&1&3 \\ 3&&3 \end{array}$
$a=d_1\vee d_2\vee d_3\vee d_5$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$ $c=\begin{bmatrix} 0&1&0&1&1 \\ 1&1&1&0&0 \end{bmatrix}$	$a=d_1\vee d_2\vee d_3\vee d_5$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$ $c=\begin{bmatrix} 0&1&1&0&1 \\ 1&0&1&1&0 \end{bmatrix}$	$a=d_1\vee d_2\vee d_3\vee d_5$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$ $c=\begin{bmatrix} 0&0&0&1&1 \\ 1&0&1&0&0 \\ 0&1&1&1&0 \end{bmatrix}$	$a=d_1\vee d_2\vee d_3\vee d_5$ $b=d_1\vee d_2\vee d_3\vee 0\vee d_4$ $c=\begin{bmatrix} 0&1&1&0&1 \\ 1&1&0&1&0 \end{bmatrix}$	$a=d_1\vee d_2\vee d_3\vee d_5$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$ $c=\begin{bmatrix} 1&0&0&0&1 \\ 0&1&1&1&0 \\ 1&1&0&1&0 \end{bmatrix}$

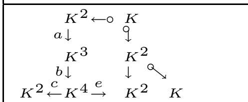
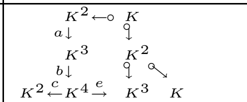
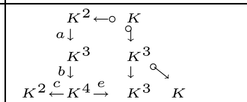
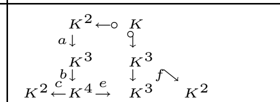
$M_{27}^{(14,3)}$	$M_{27}^{(15,3)}$	$M_{27}^{(16,3)}$	$M_{27}^{(17,3)}$	$M_{27}^{(18,3)}$
$\begin{array}{cccc} & & & K\\ & & & \downarrow\\ & & K^4 & K^2\\ & & \downarrow a\ \searrow & \downarrow\\ & K^2 & K^5 & K^3\\ d_2\vee d_3 & \downarrow\ \swarrow b & c\searrow & \\ & K^4 & & K^3\end{array}$	$\begin{array}{ccc} & & K\\ & & \downarrow\\ & K^5 & K^2\\ & \downarrow a\ \searrow & \downarrow\\ K^2 & K^6 & K^3\\ \downarrow\ \swarrow b & c\searrow & \\ K^4 & & K^3\end{array}$	$\begin{array}{cccc} & & & K\\ & & & \downarrow\\ & & K^4 & K^2\\ & & \downarrow a\ \searrow & \downarrow\\ & K^2 & K^6 & K^3\\ d_2\vee d_3 & \downarrow\ \swarrow b & c\searrow & \\ & K^4 & & K^3\end{array}$	$\begin{array}{cccc} & & & K\\ & & & \downarrow\\ & & K^5 & K^2\\ & & \downarrow a\ \searrow & \downarrow\\ & K^2 & K^6 & K^4\\ d_2\vee d_3 & \downarrow\ \swarrow b & c\searrow & \\ & K^4 & & K^3\end{array}$	$\begin{array}{cccc} & & & K\\ & & & \downarrow\\ & & K^5 & K^3\\ & & \downarrow a\ \searrow & \downarrow\\ & K^2 & K^6 & K^4\\ d_2\vee d_3 & \downarrow\ \swarrow b & c\searrow & \\ & K^4 & & K^3\end{array}$
$\begin{array}{ccc} & & 1\\ & 4 & 1\\ 2 & 1 & 3\\ 4 & & 3\end{array}$	$\begin{array}{ccc} & & 1\\ & 5 & 1\\ 2 & 1 & 3\\ 4 & & 3\end{array}$	$\begin{array}{ccc} & & 1\\ & 4 & 1\\ 2 & 2 & 3\\ 4 & & 3\end{array}$	$\begin{array}{ccc} & & 1\\ & 5 & 1\\ 2 & 1 & 4\\ 4 & & 3\end{array}$	$\begin{array}{ccc} & & 1\\ & 5 & 2\\ 2 & 1 & 4\\ 4 & & 3\end{array}$
$a=d_1\vee d_2\vee d_3\vee d_5$ $b=d_1\vee d_2\vee d_3\vee 0\vee d_4$ $c=\begin{bmatrix}0&0&0&1&1\\1&1&0&0&0\\0&1&1&1&0\end{bmatrix}$	$a=d_1\vee d_2\vee d_3\vee d_5\vee d_6$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3\vee d_4$ $c=\begin{bmatrix}1&0&0&0&0&1\\0&1&0&1&1&0\\1&1&1&0&0&0\end{bmatrix}$	$a=d_1\vee d_2\vee d_3\vee d_6$ $b=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$ $c=\begin{bmatrix}0&0&0&1&0&1\\1&0&1&0&1&0\\1&1&0&1&0&0\end{bmatrix}$	$a=d_1\vee d_2\vee d_3\vee d_4\vee d_6$ $b=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$ $c=\begin{bmatrix}0&0&0&1&0&1\\1&1&0&0&1&0\\0&1&1&1&0&0\end{bmatrix}$	$a=d_1\vee d_2\vee d_3\vee d_4\vee d_6$ $b=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$ $c=\begin{bmatrix}0&0&0&1&0&1\\1&0&1&1&0&0\\1&1&0&0&1&0\end{bmatrix}$

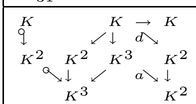
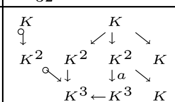
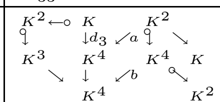
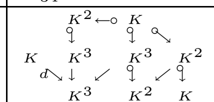
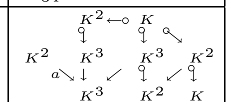
$M_{27}^{(19,3)}$	$M_{28}^{(1,3)}$	$M_{28}^{(2,3)}$	$M_{28}^{(3,3)}$	$M_{28}^{(4,3)}$	$M_{28}^{(5,3)}$
$\begin{array}{cccc} & & & K^2\\ & & & \downarrow\\ & & K^5 & K^3\\ & & \downarrow a\ \searrow & \downarrow\\ & K^2 & K^6 & K^4\\ d_2\vee d_3 & \downarrow\ \swarrow b & c\searrow & \\ & K^4 & & K^3\end{array}$	$\begin{array}{ccc} K & & \\ \downarrow & & \\ K^2 & & \\ \downarrow & & \\ K^3 & K^3 & K\\ \downarrow\ \swarrow & \downarrow d\ \searrow & \overset{\circ}{\downarrow}\\ K^3 & K & K^2\end{array}$	$\begin{array}{ccc} K & & \\ \downarrow & & \\ K^2 & & \\ \downarrow & & \\ K^3 & K^3 & K\\ \downarrow\ \swarrow & \downarrow a\ \searrow & \overset{\circ}{\downarrow}\\ K^3 & K^2 & K^2\end{array}$	$\begin{array}{ccc} K & & \\ \downarrow & & \\ K^2 & & \\ \downarrow & & \\ K^3 & K^4 & K\\ \downarrow\ \swarrow & \downarrow a\quad b\searrow & \downarrow\\ K^3 & K^2 & K^2\end{array}$	$\begin{array}{ccc} K & & \\ \downarrow & & \\ K^2 & & \\ \downarrow & & \\ K^3 & K^4 & K\\ \downarrow\ \swarrow & \downarrow a\ b\searrow & \downarrow d_2\\ K^3 & K^2 & K^3\end{array}$	$\begin{array}{cccc} & K & & \\ & \overset{\circ}{\downarrow} & & \\ & K^2 & & \\ d_1\vee d_3 & \downarrow & & \\ & K^3 & K^4 & K\\ d_1\vee d_2\vee d_4 & \downarrow\ \swarrow & \downarrow a\ b\searrow & \downarrow\\ & K^4 & K^2 & K^2\end{array}$
$\begin{array}{ccc} & & 2\\ & 5 & 1\\ 2 & 1 & 4\\ 4 & & 3\end{array}$	$\begin{array}{ccc} 1 & & \\ 1 & & \\ 1 & 3 & 1\\ 3 & 1 & 2\end{array}$	$\begin{array}{ccc} 1 & & \\ 1 & & \\ 1 & 3 & 1\\ 3 & 2 & 2\end{array}$	$\begin{array}{ccc} 1 & & \\ 1 & & \\ 1 & 4 & 1\\ 3 & 2 & 2\end{array}$	$\begin{array}{ccc} 1 & & \\ 1 & & \\ 1 & 4 & 1\\ 3 & 2 & 3\end{array}$	$\begin{array}{ccc} 1 & & \\ 1 & & \\ 1 & 4 & 1\\ 4 & 2 & 2\end{array}$
$a=d_1\vee d_2\vee d_3\vee d_4\vee d_6$ $b=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$ $c=\begin{bmatrix}0&0&0&1&0&1\\1&1&0&0&1&0\\0&1&1&1&0&0\end{bmatrix}$		$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$ $b=d_1\vee 0\vee 0\vee d_2$	$a=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$ $b=d_1\vee 0\vee 0\vee d_2$

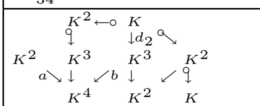
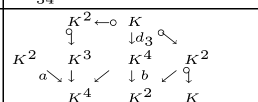
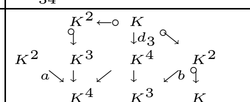
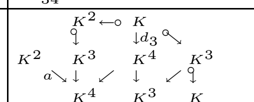
$M_{28}^{(6,3)}$	$M_{28}^{(7,3)}$	$M_{28}^{(8,3)}$	$M_{28}^{(9,3)}$	$M_{28}^{(10,3)}$
$\begin{array}{ccc} K & & \\ \downarrow & & \\ K^2 & & \\ \downarrow & & \\ K^3 & K^4 & K^2\\ \downarrow\ \swarrow & \downarrow a\ b\searrow & \downarrow\\ K^3 & K^2 & K^3\end{array}$	$\begin{array}{cccc} & K & & \\ & \overset{\circ}{\downarrow} & & \\ & K^2 & & \\ d_1\vee d_3 & \downarrow & & \\ & K^3 & K^4 & K\\ d_1\vee d_2\vee d_4 & \downarrow\ \swarrow & \downarrow a\ b\searrow & \downarrow d_2\\ & K^4 & K^2 & K^3\end{array}$	$\begin{array}{cccc} & K & & \\ & \overset{\circ}{\downarrow} & & \\ & K^2 & & \\ d_1\vee d_3 & \downarrow & & \\ & K^3 & K^4 & K^2\\ d_1\vee d_2\vee d_4 & \downarrow\ \swarrow & \downarrow a\ b\searrow & \downarrow\\ & K^4 & K^2 & K^3\end{array}$	$\begin{array}{ccc} K & & \\ \downarrow & & \\ K^2 & & \\ \downarrow & & \\ K^3 & K^5 & K\\ \downarrow\ \swarrow & \downarrow a\ b\searrow & \downarrow d_2\\ K^4 & K^2 & K^3\end{array}$	$\begin{array}{ccc} K & & \\ \downarrow & & \\ K^2 & & \\ \downarrow & & \\ K^3 & K^5 & K^2\\ \downarrow\ \swarrow & \downarrow a\ b\searrow & \downarrow\\ K^4 & K^2 & K^3\end{array}$
$\begin{array}{ccc} 1 & & \\ 1 & & \\ 1 & 4 & 2\\ 3 & 2 & 3\end{array}$	$\begin{array}{ccc} 1 & & \\ 1 & & \\ 1 & 4 & 1\\ 4 & 2 & 3\end{array}$	$\begin{array}{ccc} 1 & & \\ 1 & & \\ 1 & 4 & 2\\ 4 & 2 & 3\end{array}$	$\begin{array}{ccc} 1 & & \\ 1 & & \\ 1 & 5 & 1\\ 4 & 2 & 3\end{array}$	$\begin{array}{ccc} 1 & & \\ 1 & & \\ 1 & 5 & 2\\ 4 & 2 & 3\end{array}$
$a=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}0&1&0&1&1\\1&1&1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$	$a=\begin{bmatrix}0&1&1&0&1\\1&0&1&1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$

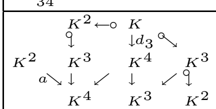
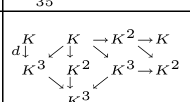
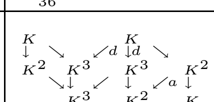
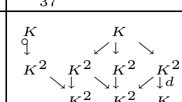
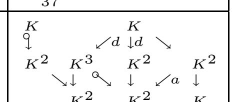
$M_{28}^{(11,3)}$	$M_{28}^{(12,3)}$	$M_{28}^{(13,3)}$	$M_{28}^{(14,3)}$	$M_{28}^{(15,3)}$
$\begin{array}{ccc} K & & \\ \downarrow & & \\ K^2 & & \\ \downarrow & & \\ K^3 & K^5 & K\\ \downarrow\ \swarrow & \downarrow a\ b\searrow & \downarrow d_2\\ K^4 & K^3 & K^3\end{array}$	$\begin{array}{ccc} K & & \\ \downarrow & & \\ K^2 & & \\ \downarrow & & \\ K^3 & K^5 & K^2\\ \downarrow\ \swarrow & \downarrow a\ b\searrow & \downarrow d_2\vee d_3\\ K^4 & K^2 & K^4\end{array}$	$\begin{array}{ccc} K & & \\ \downarrow & & \\ K^2 & & \\ \downarrow & & \\ K^3 & K^5 & K^2\\ \downarrow\ \swarrow & \downarrow a\ b\searrow & \downarrow\\ K^4 & K^3 & K^3\end{array}$	$\begin{array}{ccc} K & & \\ \downarrow & & \\ K^2 & & \\ \downarrow & & \\ K^3 & K^5 & K^2\\ \downarrow\ \swarrow & \downarrow a\ b\searrow & \downarrow d_2\vee d_3\\ K^4 & K^3 & K^4\end{array}$	$\begin{array}{ccc} K & & \\ \downarrow & & \\ K^2 & & \\ \downarrow & & \\ K^3 & K^6 & K^2\\ \downarrow\ \swarrow & \downarrow a\ b\searrow & \downarrow\\ K^4 & K^3 & K^4\end{array}$
$\begin{array}{ccc} 1 & & \\ 1 & & \\ 1 & 5 & 1\\ 4 & 3 & 3\end{array}$	$\begin{array}{ccc} 1 & & \\ 1 & & \\ 1 & 5 & 2\\ 4 & 2 & 4\end{array}$	$\begin{array}{ccc} 1 & & \\ 1 & & \\ 1 & 5 & 2\\ 4 & 3 & 3\end{array}$	$\begin{array}{ccc} 1 & & \\ 1 & & \\ 1 & 5 & 2\\ 4 & 3 & 4\end{array}$	$\begin{array}{ccc} 1 & & \\ 1 & & \\ 1 & 6 & 2\\ 4 & 3 & 4\end{array}$
$a=\begin{bmatrix}0&0&0&1&1\\1&0&1&0&0\\0&1&1&1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$	$a=\begin{bmatrix}0&1&1&0&1\\1&1&0&1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee 0\vee d_4$	$a=\begin{bmatrix}1&0&0&0&1\\0&1&1&1&0\\1&1&0&1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$	$a=\begin{bmatrix}0&0&0&1&1\\1&1&0&0&0\\0&1&1&1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee 0\vee d_4$	$a=\begin{bmatrix}1&0&0&0&0&1\\0&1&0&1&1&0\\1&1&1&0&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3\vee d_4$

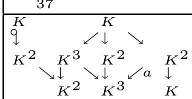
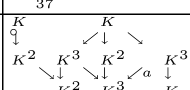
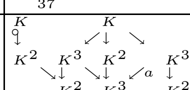
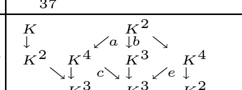
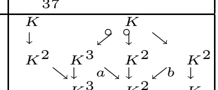
$M_{28}^{(16,3)}$	$M_{28}^{(17,3)}$	$M_{28}^{(18,3)}$	$M_{28}^{(19,3)}$	$M_{29}^{(1,3)}$
$\begin{array}{ccc} K & & \\ \downarrow & & \\ K^2 & & \\ \downarrow & & \\ K^3 & K^6 & K^2\\ \downarrow\ \swarrow & \downarrow a\ b\searrow & \downarrow d_2\vee d_3\\ K^5 & K^3 & K^4\end{array}$	$\begin{array}{ccc} K & & \\ \downarrow & & \\ K^2 & & \\ \downarrow & & \\ K^4 & K^6 & K^2\\ \downarrow\ \swarrow & \downarrow a\ b\searrow & \downarrow d_2\vee d_3\\ K^5 & K^3 & K^4\end{array}$	$\begin{array}{ccc} K & & \\ \downarrow & & \\ K^3 & & \\ \downarrow & & \\ K^4 & K^6 & K^2\\ \downarrow\ \swarrow & \downarrow a\ b\searrow & \downarrow d_2\vee d_3\\ K^5 & K^3 & K^4\end{array}$	$\begin{array}{ccc} K^2 & & \\ \downarrow & & \\ K^3 & & \\ \downarrow & & \\ K^4 & K^6 & K^2\\ \downarrow\ \swarrow & \downarrow a\ b\searrow & \downarrow d_2\vee d_3\\ K^5 & K^3 & K^4\end{array}$	$\begin{array}{cccc} & K & & \\ \overset{\circ}{\swarrow} & \downarrow & \overset{\circ}{\searrow} & \\ K^2 & K^2 & K^2 & \\ \downarrow & \downarrow a & \downarrow b\ \overset{\circ}{\searrow} & \\ K^2 \leftarrow & K^3 \circ\!\!\rightarrow & K^2 & K\end{array}$
$\begin{array}{ccc} 1 & & \\ 1 & & \\ 1 & 6 & 2\\ 5 & 3 & 4\end{array}$	$\begin{array}{ccc} 1 & & \\ 1 & & \\ 2 & 6 & 2\\ 5 & 3 & 4\end{array}$	$\begin{array}{ccc} 1 & & \\ 2 & & \\ 1 & 6 & 2\\ 5 & 3 & 4\end{array}$	$\begin{array}{ccc} 2 & & \\ 1 & & \\ 1 & 6 & 2\\ 5 & 3 & 4\end{array}$	$\begin{array}{cccc} & 1 & & \\ 1 & 1 & 1 & \\ 2 & 1 & 2 & 1\end{array}$
$a=\begin{bmatrix}0&0&0&1&0&1\\1&0&1&0&1&0\\1&1&0&1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$	$a=\begin{bmatrix}0&0&0&1&0&1\\1&1&0&0&1&0\\0&1&1&1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$	$a=\begin{bmatrix}0&0&0&1&0&1\\1&0&1&1&0&0\\1&1&0&0&1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$	$a=\begin{bmatrix}0&0&0&1&0&1\\1&1&0&0&1&0\\0&1&1&1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$	$a=\begin{bmatrix}0&1\\1&0\\1&1\end{bmatrix}$ $b=\begin{bmatrix}1&1\\0&1\end{bmatrix}$

$M_{30}^{(1,3)}$	$M_{30}^{(2,3)}$	$M_{30}^{(3,3)}$	$M_{30}^{(4,3)}$
			
11 11 2121	11 11 2131	11 12 2131	11 12 2132
$a=d_1\vee d_3$ $b=d_1\vee d_2\vee d_4$ $c=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$ $e=d_1\vee 0\vee 0\vee d_2$	$a=d_1\vee d_3$ $b=d_1\vee d_2\vee d_4$ $c=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$ $e=d_1\vee d_2\vee 0\vee d_3$	$a=d_1\vee d_3$ $b=d_1\vee d_2\vee d_4$ $c=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$ $e=d_1\vee d_2\vee 0\vee d_3$	$a=d_1\vee d_3$ $b=d_1\vee d_2\vee d_4$ $c=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$ $e=d_1\vee d_2\vee 0\vee d_3$ $f=d_1\vee 0\vee d_2$

$M_{31}^{(1,3)}$	$M_{32}^{(1,3)}$	$M_{33}^{(1,3)}$	$M_{34}^{(1,3)}$	$M_{34}^{(2,3)}$
				
1 11 1121 3 2	1 1 1111 311	112 1121 4 2	11 1121 321	11 2121 321
$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1\\0&1\\0&1\end{bmatrix}$	$a=d_1\vee d_4$ $b=\begin{bmatrix}0&1&1&0\\1&1&0&0\\0&1&0&0\\1&0&0&1\end{bmatrix}$		$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$

$M_{34}^{(3,3)}$	$M_{34}^{(4,3)}$	$M_{34}^{(5,3)}$	$M_{34}^{(6,3)}$
			
11 2121 421	11 2131 421	11 2131 431	11 2132 431
$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_3\vee d_4$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=0\vee d_1\vee d_2\vee 0$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_3$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$

$M_{34}^{(7,3)}$	$M_{35}^{(1,3)}$	$M_{36}^{(1,3)}$	$M_{37}^{(1,3)}$	$M_{37}^{(2,3)}$
				
11 2132 432	1111 1122 3	1 1 1121 321	1 1 1111 221	1 1 1211 221
$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$		$a=\begin{bmatrix}1&0\\1&1\end{bmatrix}$		$a=\begin{bmatrix}1&1\\1&0\end{bmatrix}$

$M_{37}^{(3,3)}$	$M_{37}^{(4,3)}$	$M_{37}^{(5,3)}$	$M_{37}^{(6,3)}$	$M_{37}^{(7,3)}$
				
1 1 1211 231	1 1 1212 231	1 1 1212 232	1 2 1212 332	1 1 1211 321
$a=\begin{bmatrix}1&1\\0&1\\0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&1\\0&1&0\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&1\\0&1&1\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $c=d_1\vee d_2\vee 0\vee d_3$ $b=\begin{bmatrix}0&1\\1&1\\1&0\end{bmatrix}$ $e=\begin{bmatrix}0&1&1&0\\1&1&0&1\\1&0&0&0\end{bmatrix}$	$a=d_1\vee d_2\vee d_2$ $b=\begin{bmatrix}0&1\\1&1\end{bmatrix}$

$M_{37}^{(8,3)}$	$M_{37}^{(9,3)}$	$M_{37}^{(10,3)}$	$M_{37}^{(11,3)}$	$M_{37}^{(12,3)}$
$\begin{array}{cccc} K & & K & \\ \downarrow & \overset{\circ}{\swarrow} & \overset{\circ}{\downarrow} & \searrow \\ K^2 & K^3 & K^2 & K^2 \\ & \searrow\downarrow & \searrow\overset{\circ}{\downarrow} & \swarrow a\ \downarrow \\ & K^3 & K^3 & K \end{array}$	$\begin{array}{cccc} K & & K & \\ \downarrow & \overset{\circ}{\swarrow} & \overset{\circ}{\downarrow} & \searrow \\ K^2 & K^3 & K^2 & K^3 \\ & \searrow\downarrow & \searrow\overset{\circ}{\downarrow} & \swarrow a\ \downarrow \\ & K^3 & K^3 & K \end{array}$	$\begin{array}{cccc} K & & K & \\ \overset{\circ}{\downarrow} & \swarrow & \downarrow & \searrow \\ K^2 & K^3 & K^2 & K^3 \\ & \overset{\circ}{\searrow}\downarrow & \searrow\downarrow & \swarrow a\ \downarrow \\ & K^3 & K^3 & K^2 \end{array}$	$\begin{array}{cccc} K & & K^2 & \\ \overset{\circ}{\downarrow} & \swarrow a & \downarrow b & \searrow \\ K^2 & K^4 & K^3 & K^4 \\ & \searrow\downarrow c & \searrow\ \downarrow e & \swarrow f\ \downarrow \\ & K^3 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} K & & K^2 & \\ \downarrow & \swarrow a & \downarrow b & b\searrow \\ K^2 & K^4 & K^3 & K^3 \\ & \searrow\downarrow & c\searrow\downarrow & \swarrow\ \overset{\circ}{\downarrow} \\ & K^3 & K^3 & K \end{array}$
1 1 1211 331	1 1 1212 331	1 1 1212 332	1 2 1212 342	1 2 1211 331
$a=\begin{bmatrix}0&1\\0&1\\1&1\end{bmatrix}$	$a=\begin{bmatrix}0&1&1\\0&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&1\\0&1&1\\0&0&1\end{bmatrix}$	$a=d_1\vee d_4$ $c=d_1\vee d_2\vee 0\vee d_3$ $b=d_1\vee d_3$ $e=d_1\vee d_2\vee d_4$ $f=\begin{bmatrix}1&0&0&1\\0&0&1&1\\0&0&0&1\\0&1&1&0\end{bmatrix}$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=\begin{bmatrix}0&1\\1&1\\1&0\end{bmatrix}$ $c=d_1\vee d_2\vee 0\vee d_3$

$M_{37}^{(13,3)}$	$M_{37}^{(14,3)}$	$M_{37}^{(15,3)}$	$M_{37}^{(16,3)}$
$\begin{array}{cccc} K & & K & \\ \overset{\circ}{\downarrow} & \swarrow & \downarrow & \searrow \\ K^2 & K^4 & K^2 & K^2 \\ & \overset{\circ}{\searrow}\downarrow & a\searrow\downarrow & \swarrow b\ \downarrow \\ & K^3 & K^3 & K \end{array}$	$\begin{array}{cccc} K & & K & \\ \overset{\circ}{\downarrow} & \swarrow & \downarrow & \searrow \\ K^2 & K^4 & K^2 & K^3 \\ & \overset{\circ}{\searrow}\downarrow & a\searrow\downarrow & \swarrow b\ \downarrow \\ & K^3 & K^3 & K \end{array}$	$\begin{array}{cccc} K & & K & \\ \overset{\circ}{\downarrow} & \swarrow & \downarrow & \searrow \\ K^2 & K^4 & K^2 & K^3 \\ & \overset{\circ}{\searrow}\downarrow & a\searrow\downarrow & \swarrow b\ \downarrow \\ & K^3 & K^3 & K^2 \end{array}$	$\begin{array}{cccc} K & & K^2 & \\ \overset{\circ}{\downarrow} & \swarrow & \downarrow a & \searrow \\ K^2 & K^5 & K^3 & K^4 \\ & \overset{\circ}{\searrow}\downarrow & b\searrow\downarrow c & \swarrow e\ \downarrow \\ & K^3 & K^4 & K^2 \end{array}$
1 1 1311 331	1 1 1312 331	1 1 1312 332	1 2 1312 342
$a=d_1\vee d_1\vee d_2\vee d_3$ $b=\begin{bmatrix}1&1\\0&1\\0&1\end{bmatrix}$	$a=d_1\vee d_1\vee d_2\vee d_3$ $b=\begin{bmatrix}1&1&1\\0&1&0\\0&0&1\end{bmatrix}$	$a=d_1\vee d_1\vee d_2\vee d_3$ $b=\begin{bmatrix}1&0&1\\0&1&1\\0&0&1\end{bmatrix}$	$a=d_1\vee d_3$ $b=d_1\vee d_4\vee d_1\vee d_2\vee d_3$ $c=d_1\vee d_2\vee d_4$ $e=\begin{bmatrix}1&0&1&1\\0&0&1&0\\0&0&0&1\\0&1&1&0\end{bmatrix}$

$M_{37}^{(17,3)}$	$M_{37}^{(18,3)}$	$M_{37}^{(19,3)}$	$M_{37}^{(20,3)}$
$\begin{array}{cccc} K & & K^2 & \\ \downarrow & \swarrow a & \downarrow b & \searrow \\ K^2 & K^4 & K^3 & K^3 \\ & \searrow\downarrow & c\searrow\downarrow & \swarrow e\ \downarrow \\ & K^3 & K^3 & K^2 \end{array}$	$\begin{array}{cccc} K & & K & \\ \overset{\circ}{\downarrow} & \swarrow & \overset{\circ}{\downarrow} & \searrow \\ K^2 & K^4 & K^2 & K^3 \\ & \overset{\circ}{\searrow}\downarrow & a\searrow\downarrow b & \swarrow c\ \downarrow \\ & K^3 & K^4 & K \end{array}$	$\begin{array}{cccc} K & & K & \\ \overset{\circ}{\downarrow} & \swarrow & \overset{\circ}{\downarrow} & \overset{\circ}{\searrow} \\ K^2 & K^4 & K^2 & K^3 \\ & \overset{\circ}{\searrow}\downarrow & a\searrow\downarrow b & \swarrow c\ \overset{\circ}{\downarrow} \\ & K^3 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} K & & K^2 & \\ \overset{\circ}{\downarrow} & \swarrow & \downarrow a & \searrow \\ K^2 & K^5 & K^3 & K^4 \\ & \overset{\circ}{\searrow}\downarrow & b\searrow\downarrow c & \swarrow e\ \downarrow \\ & K^4 & K^4 & K^2 \end{array}$
1 2 1211 332	1 1 1312 341	1 1 1312 342	1 2 1312 442
$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=\begin{bmatrix}1&1\\1&0\\1&0\end{bmatrix}$ $c=d_1\vee d_2\vee 0\vee d_3$ $e=\begin{bmatrix}1&1&0\\1&0&1\\1&0&0\end{bmatrix}$	$a=d_4\vee d_1\vee d_2\vee d_3$ $b=d_1\vee d_4$ $e=\begin{bmatrix}0&0&1\\0&1&1\\0&0&1\\1&1&0\end{bmatrix}$	$a=d_4\vee d_1\vee d_2\vee d_3$ $b=\begin{bmatrix}1&0\\1&0\\1&0\\0&1\end{bmatrix}$ $c=\begin{bmatrix}1&0&0\\0&1&0\\0&0&0\\1&0&1\end{bmatrix}$	$a=d_1\vee d_3$ $b=d_1\vee d_4\vee d_1\vee d_2\vee d_3$ $c=d_1\vee d_2\vee d_4$ $e=\begin{bmatrix}1&0&0&1\\0&0&1&1\\0&0&0&1\\0&1&1&0\end{bmatrix}$

$M_{37}^{(21,3)}$	$M_{37}^{(22,3)}$	$M_{37}^{(23,3)}$	$M_{37}^{(24,3)}$
$\begin{array}{cccc} K & & K & \\ \overset{\circ}{\downarrow} & \swarrow & \overset{\circ}{\downarrow} & \searrow \\ K^2 & K^4 & K^3 & K^3 \\ & \overset{\circ}{\searrow}\downarrow & a\searrow\downarrow b & \swarrow c\ \downarrow \\ & K^3 & K^4 & K \end{array}$	$\begin{array}{cccc} K & & K & \\ \overset{\circ}{\downarrow} & \swarrow & \overset{\circ}{\downarrow} & \overset{\circ}{\searrow} \\ K^2 & K^4 & K^3 & K^3 \\ & \overset{\circ}{\searrow}\downarrow & a\searrow\downarrow b & \swarrow c\ \overset{\circ}{\downarrow} \\ & K^3 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} K & & K & \\ \overset{\circ}{\downarrow} & \swarrow & \overset{\circ}{\downarrow} & \overset{\circ}{\searrow} \\ K^2 & K^4 & K^2 & K^4 \\ & \overset{\circ}{\searrow}\downarrow & a\searrow\downarrow b & \swarrow c\ \overset{\circ}{\downarrow} \\ & K^3 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} K & & K^2 & \\ \overset{\circ}{\downarrow} & \swarrow & \downarrow a & \searrow \\ K^3 & K^5 & K^3 & K^4 \\ & \overset{\circ}{\searrow}\downarrow & b\searrow\downarrow c & \swarrow e\ \downarrow \\ & K^4 & K^4 & K^2 \end{array}$
1 1 1322 341	1 1 1322 342	1 1 1313 342	1 2 2312 442
$a=d_4\vee d_1\vee d_2\vee d_3$ $b=d_1\vee d_2\vee d_4$ $c=\begin{bmatrix}0&1&1\\0&1&0\\0&0&1\\1&1&0\end{bmatrix}$	$a=d_4\vee d_1\vee d_2\vee d_3$ $b=\begin{bmatrix}0&1&0\\1&1&0\\1&0&0\\0&0&1\end{bmatrix}$ $c=\begin{bmatrix}1&0&0\\0&1&0\\0&0&0\\1&0&1\end{bmatrix}$	$a=d_4\vee d_1\vee d_2\vee d_3$ $b=\begin{bmatrix}1&0\\1&0\\1&0\\0&1\end{bmatrix}$ $c=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&1&0&1\end{bmatrix}$	$a=d_1\vee d_3$ $b=d_1\vee d_4\vee d_1\vee d_2\vee d_3$ $c=d_1\vee d_2\vee d_4$ $e=\begin{bmatrix}1&0&1&1\\0&0&1&0\\0&0&0&1\\0&1&1&0\end{bmatrix}$

$M_{37}^{(25,3)}$	$M_{37}^{(26,3)}$	$M_{37}^{(27,3)}$	$M_{37}^{(28,3)}$
$\begin{array}{cccc} K^2 & & K^2 & \\ \overset{\circ}{\downarrow} & \swarrow & \downarrow a & \searrow \\ K^3 & K^5 & K^3 & K^4 \\ & \overset{\circ}{\searrow}\downarrow & b\searrow\downarrow c & \swarrow e\ \downarrow \\ & K^4 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} K & & K & \\ \overset{\circ}{\downarrow} & \swarrow & \overset{\circ}{\downarrow} & \overset{\circ}{\searrow} \\ K^2 & K^4 & K^3 & K^4 \\ & \overset{\circ}{\searrow}\downarrow & a\searrow\downarrow b & \swarrow c\ \overset{\circ}{\downarrow} \\ & K^3 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} K & & K & \\ \overset{\circ}{\downarrow} & \swarrow & \overset{\circ}{\downarrow} & \overset{\circ}{\searrow} \\ K^2 & K^4 & K^3 & K^4 \\ & \overset{\circ}{\searrow}\downarrow & a\searrow\downarrow b & \swarrow c\ \downarrow e \\ & K^3 & K^5 & K^2 \end{array}$	$\begin{array}{cccc} K & & K & \\ \overset{\circ}{\downarrow} & \swarrow & \overset{\circ}{\downarrow} & \overset{\circ}{\searrow} \\ K^2 & K^5 & K^3 & K^4 \\ & \overset{\circ}{\searrow}\downarrow & a\searrow\downarrow b & \swarrow c\ \overset{\circ}{\downarrow} \\ & K^3 & K^5 & K^2 \end{array}$
2 2 1312 442	1 1 1323 342	1 1 1323 352	1 1 1423 352
$a=d_1\vee d_3$ $b=d_1\vee d_4\vee d_1\vee d_2\vee d_3$ $c=d_1\vee d_2\vee d_4$ $e=\begin{bmatrix}1&0&0&1\\0&0&1&1\\0&0&0&1\\0&1&1&0\end{bmatrix}$	$a=d_4\vee d_1\vee d_2\vee d_3$ $b=\begin{bmatrix}1&1&0\\0&1&0\\1&0&0\\0&0&1\end{bmatrix}$ $c=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&1&0&1\end{bmatrix}$	$a=d_5\vee d_1\vee d_2\vee d_3$ $b=\begin{bmatrix}1&0&0\\1&1&0\\1&0&0\\0&1&0\\0&0&1\end{bmatrix}$ $c=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&0&0\\0&0&1&0\\1&0&0&1\end{bmatrix}$ $e=0\vee d_1\vee 0\vee d_2$	$a=d_5\vee d_1\vee d_2\vee d_3\vee d_4$ $b=\begin{bmatrix}1&0&0\\1&1&0\\1&0&0\\0&1&0\\0&0&1\end{bmatrix}$ $c=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&0&0&0\\0&1&0&1\end{bmatrix}$

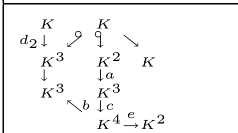
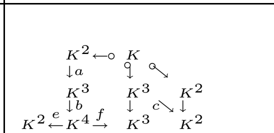
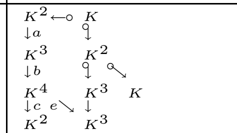
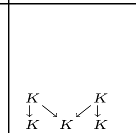
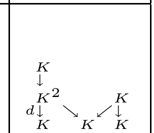
$M^{(29,3)}_{37}$	$M^{(30,3)}_{37}$	$M^{(31,3)}_{37}$	$M^{(1,3)}_{38}$
$\begin{array}{cccc} K & & K & \\ \downarrow & \swarrow & \downarrow & \searrow \\ K^2 & K^5 & K^3 & K^4 \\ \searrow\downarrow a & \searrow & \downarrow b\ \swarrow c & \downarrow e \\ & K^4 & K^5 & K^2 \end{array}$	$\begin{array}{cccc} K & & K & \\ \downarrow & \swarrow & \downarrow & \searrow \\ K^3 & K^5 & K^3 & K^4 \\ & \searrow\downarrow & a\searrow\downarrow b & \swarrow c\ \downarrow \\ & K^4 & K^5 & K^2 \end{array}$	$\begin{array}{cccc} K^2 & & K & \\ \downarrow & \swarrow & \downarrow & \searrow \\ K^3 & K^5 & K^3 & K^4 \\ & \searrow\downarrow & a\searrow\downarrow b & \swarrow c\ \downarrow \\ & K^4 & K^5 & K^2 \end{array}$	$\begin{array}{cccc} & \swarrow & K \downarrow & \searrow \\ K & K^2 & K^2 & K^2 \\ \downarrow & \nearrow\downarrow a & \downarrow b & \downarrow \\ K & K^2 \leftarrow\circ & K^3 \rightarrow & K^2 \end{array}$
1 1 1423 452	1 1 2423 452	2 1 1423 452	1 1111 1212
$a=d_1\vee d_2\vee 0\vee d_3\vee d_4$ $b=\begin{bmatrix}1&0&0\\1&1&0\\1&0&0\\0&1&0\\0&0&1\end{bmatrix}$ $c=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&0&0\\0&0&1&0\\1&0&0&1\end{bmatrix}$ $e=0\vee d_1\vee 0\vee d_2$	$a=d_5\vee d_1\vee d_2\vee d_3\vee d_4$ $b=\begin{bmatrix}1&0&0\\1&1&0\\1&0&0\\0&1&0\\0&0&1\end{bmatrix}$ $c=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&0&0&0\\0&1&0&1\end{bmatrix}$	$a=d_5\vee d_1\vee d_2\vee d_3\vee d_4$ $b=\begin{bmatrix}1&0&0\\0&1&0\\1&1&0\\0&1&0\\0&0&1\end{bmatrix}$ $c=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&0&0&0\\0&1&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1\\0&1\end{bmatrix}$ $b=\begin{bmatrix}0&1\\1&0\\1&1\end{bmatrix}$

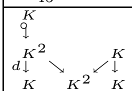
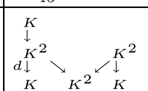
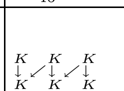
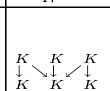
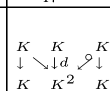
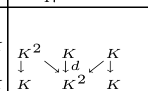
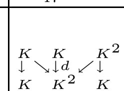
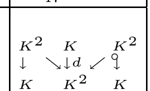
$M^{(2,3)}_{38}$	$M^{(3,3)}_{38}$	$M^{(4,3)}_{38}$	$M^{(5,3)}_{38}$	$M^{(6,3)}_{38}$
$\begin{array}{cccc} & \swarrow & K \downarrow & \searrow \\ K & K^2 & K^2 & K^2 \\ \downarrow & \swarrow\downarrow & \downarrow & \downarrow \\ K^2 & K^2\leftarrow\circ & K^3 \xrightarrow{a} & K^2 \end{array}$	$\begin{array}{cccc} & \swarrow & K \downarrow & \searrow \\ K & K^3 & K^2 & K^2 \\ \downarrow & \swarrow\downarrow a & \downarrow & \downarrow \\ K^2 & K^2 \xleftarrow{b} & K^3 \rightarrow & K^2 \end{array}$	$\begin{array}{cccc} & \swarrow & K \downarrow & \searrow \\ K & K^3 & K^2 & K^2 \\ \downarrow & \swarrow\downarrow & \downarrow & \downarrow \\ K^2 & K^3 \xleftarrow{a} & K^3 \rightarrow & K^2 \end{array}$	$\begin{array}{cccc} & \swarrow & K \downarrow & \searrow \\ K & K^3 & K^2 & K^2 \\ \downarrow & \swarrow\downarrow & \downarrow & \downarrow \\ K^2 & K^3 \xleftarrow{a} & K^4 \rightarrow & K^2 \end{array}$	$\begin{array}{cccc} & \swarrow & K \downarrow & \searrow \\ K & K^3 & K^3 & K^2 \\ \downarrow & \nearrow\downarrow & \downarrow & \downarrow \\ K^2 & K^3 \leftarrow & K^4 \xrightarrow{a} & K^2 \end{array}$
1 1111 2212	1 1211 2212	1 1211 2312	1 1211 2322	1 1221 2312
$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&0\\0&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0&1\\0&1&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&1\\0&1&1\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&1&1\\0&1&1&0\\0&0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$

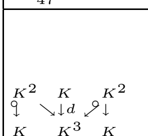
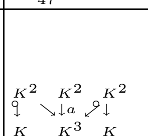
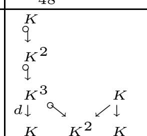
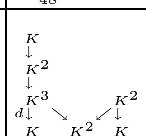
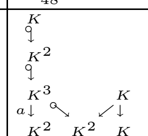
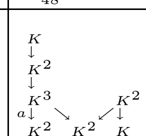
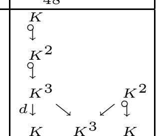
$M^{(7,3)}_{38}$	$M^{(8,3)}_{38}$	$M^{(9,3)}_{38}$	$M^{(10,3)}_{38}$	$M^{(11,3)}_{38}$
$\begin{array}{cccc} & \swarrow & K \downarrow & \searrow \\ K & K^3 & K^2 & K^2 \\ \downarrow & \nearrow\downarrow & \downarrow a & \downarrow \\ K^2 & K^3 \leftarrow & K^4 \xrightarrow{b} & K^3 \end{array}$	$\begin{array}{cccc} & \swarrow & K \downarrow & \searrow \\ K & K^3 & K^3 & K^2 \\ \downarrow & \nearrow\downarrow & \downarrow & \downarrow \\ K^2 & K^3 \leftarrow & K^4 \xrightarrow{a} & K^3 \end{array}$	$\begin{array}{cccc} & \swarrow & K \downarrow & \searrow \\ K & K^3 & K^3 & K^2 \\ \downarrow & \nearrow\downarrow & \downarrow & \downarrow \\ K^2 & K^3 \leftarrow & K^5 \xrightarrow{a} & K^3 \end{array}$	$\begin{array}{cccc} & \swarrow & K \downarrow & \searrow \\ K & K^3 & K^3 & K^2 \\ \downarrow & \nearrow\downarrow a & \downarrow & \downarrow \\ K^2 & K^4 \leftarrow & K^5 \xrightarrow{b} & K^3 \end{array}$	$\begin{array}{cccc} & \swarrow & K \downarrow & \searrow \\ K & K^4 & K^3 & K^2 \\ \downarrow & \nearrow\downarrow a & \downarrow & \downarrow \\ K^2 & K^4 \leftarrow & K^5 \xrightarrow{b} & K^3 \end{array}$
1 1211 2323	1 1221 2313	1 1221 2323	1 1221 2423	1 1321 2423
$a=d_2\vee d_3$ $b=\begin{bmatrix}0&1&0&1\\1&1&0&0\\1&0&1&0\end{bmatrix}$	$a=\begin{bmatrix}1&0&0&1\\0&1&0&1\\1&0&1&0\end{bmatrix}$	$a=\begin{bmatrix}0&1&0&1&0\\1&1&1&0&0\\1&0&0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&0\\0&1&0\\0&0&1\\1&1&0\end{bmatrix}$ $b=\begin{bmatrix}0&1&0&1&0\\1&1&1&0&0\\1&0&0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&1&0\\0&1&0&0\\0&0&1&1\\1&1&0&0\end{bmatrix}$ $b=\begin{bmatrix}0&1&0&1&0\\0&1&1&0&0\\1&0&0&0&1\end{bmatrix}$

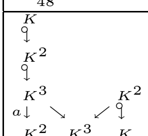
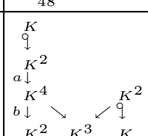
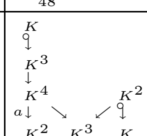
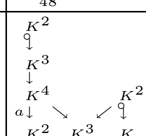
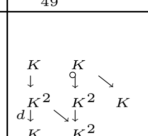
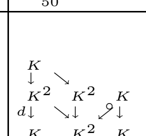
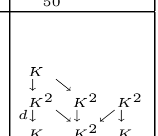
$M^{(12,3)}_{38}$	$M^{(13,3)}_{38}$	$M^{(1,3)}_{39}$	$M^{(2,3)}_{39}$	$M^{(3,3)}_{39}$
$\begin{array}{cccc} & \swarrow & K \downarrow & \searrow \\ K & K^4 & K^3 & K^2 \\ \downarrow & \nearrow\downarrow a & \downarrow & \downarrow \\ K^3 & K^4 \leftarrow & K^5 \xrightarrow{b} & K^3 \end{array}$	$\begin{array}{cccc} & \swarrow & K \downarrow & \searrow \\ K^2 & K^4 & K^3 & K^2 \\ a\downarrow & \nearrow\downarrow b & \downarrow & \downarrow \\ K^3 & K^4 \leftarrow & K^5 \xrightarrow{c} & K^3 \end{array}$	$\begin{array}{cccc} & K \circ\!\rightarrow & K^2 & \\ & \downarrow & \downarrow & \searrow \\ K & K^3 & K^3 & K^3 \\ \searrow & \downarrow\ \searrow & \downarrow & \swarrow\downarrow d \\ & K^2 & K^3 & K \end{array}$	$\begin{array}{cccc} & K \circ\!\rightarrow & K^2 & \\ & \downarrow & \downarrow & \searrow \\ K & K^3 & K^3 & K^3 \\ \searrow & \downarrow\ \searrow & \downarrow & \swarrow\downarrow a \\ & K^2 & K^3 & K^2 \end{array}$	$\begin{array}{cccc} & K \circ\!\rightarrow & K^2 & \\ & \downarrow & \downarrow & \searrow \\ K & K^3 & K^3 & K^4 \\ \searrow & \downarrow\ \searrow & \downarrow & \swarrow a\ \downarrow \\ & K^2 & K^3 & K^2 \end{array}$
1 1321 3423	1 2321 3423	11 1211 231	11 1211 232	11 1212 232
$a=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&0&1\\1&1&1&0\end{bmatrix}$ $b=\begin{bmatrix}0&1&0&1&0\\1&1&1&0&0\\1&0&0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&0&1\\1&1&1&0\end{bmatrix}$ $c=\begin{bmatrix}0&1&0&1&0\\1&1&1&0&0\\1&0&0&0&1\end{bmatrix}$		$a=\begin{bmatrix}0&1&1\\1&1&0\end{bmatrix}$	$a=\begin{bmatrix}0&0&1&1\\1&0&1&0\\0&1&0&1\end{bmatrix}$

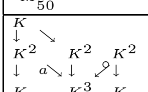
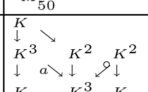
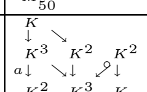
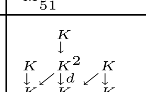
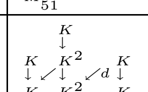
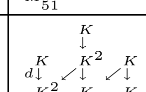
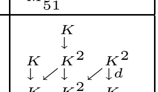
$M^{(4,3)}_{39}$	$M^{(5,3)}_{39}$	$M^{(6,3)}_{39}$	$M^{(7,3)}_{39}$	$M^{(1,3)}_{40}$
$\begin{array}{cccc} & K \circ\!\rightarrow & K^2 & \\ & \downarrow & \downarrow & \searrow \\ K & K^3 & K^3 & K^4 \\ & \searrow\downarrow a & b\searrow\downarrow & \swarrow c\ \downarrow \\ & K^2 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} & K \circ\!\rightarrow & K^2 & \\ & \downarrow & \downarrow & \searrow \\ K & K^4 & K^3 & K^4 \\ & \searrow\downarrow a & b\searrow\downarrow & \swarrow c\ \downarrow \\ & K^2 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} & K \circ\!\rightarrow & K^2 & \\ & \downarrow & \downarrow & \searrow \\ K & K^4 & K^3 & K^4 \\ & \searrow\downarrow a & b\searrow\downarrow & \swarrow c\ \downarrow \\ & K^3 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} & K \circ\!\rightarrow & K^2 & \\ & \downarrow & \downarrow & \searrow \\ K^2 & K^4 & K^3 & K^4 \\ & \searrow\downarrow a & b\searrow\downarrow & \swarrow c\ \downarrow \\ & K^3 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} & K^2 \leftarrow & K & K \\ & \downarrow a & \downarrow & \searrow\downarrow \\ K & K^3 & K^2 & K \\ & \searrow\downarrow & \searrow\downarrow & \\ & K^2 & K^2 & \end{array}$
11 1212 242	11 1312 242	11 1312 342	11 2312 342	111 1111 22
$a=d_1\vee 0\vee d_2$ $b=d_1\vee d_4\vee d_3$ $c=\begin{bmatrix}0&0&0&1\\1&0&1&1\\0&1&0&1\\0&0&1&0\end{bmatrix}$	$a=0\vee d_1\vee 0\vee d_2$ $b=d_1\vee d_2\vee d_4\vee d_3$ $c=\begin{bmatrix}0&0&0&1\\1&0&1&1\\0&1&0&1\\0&0&1&0\end{bmatrix}$	$a=d_1\vee 0\vee d_2\vee d_3$ $b=d_1\vee d_4\vee d_2\vee d_3$ $c=\begin{bmatrix}0&1&0&0\\1&1&1&0\\0&1&0&1\\1&0&0&0\end{bmatrix}$	$a=d_1\vee d_2\vee 0\vee d_3$ $b=d_1\vee d_2\vee d_4\vee d_3$ $c=\begin{bmatrix}0&0&1&1\\1&0&1&0\\0&1&0&1\\0&0&1&0\end{bmatrix}$	$a=\begin{bmatrix}0&1\\1&0\\1&1\end{bmatrix}$

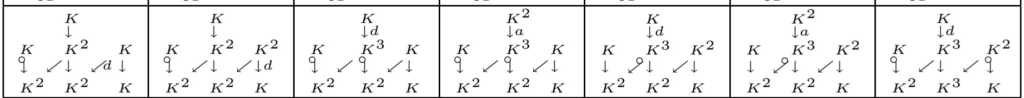
$M_{41}^{(1,3)}$	$M_{42}^{(1,3)}$	$M_{43}^{(1,3)}$	$M_{44}^{(1,3)}$	$M_{45}^{(1,3)}$
				
11 111 31 12	11 121 2132	11 11 111 23	1 1 111	1 1 1 111
$a=d_1\vee d_3$ $c=d_1\vee d_2\vee d_4$ $b=d_1\vee d_2\vee 0\vee d_3$ $e=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=d_1\vee d_3$ $b=d_1\vee d_2\vee d_4$ $c=d_1\vee 0\vee d_2$ $f=d_1\vee d_2\vee 0\vee d_3$ $e=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=d_1\vee d_3$ $b=d_1\vee d_2\vee d_4$ $e=d_1\vee d_2\vee 0\vee d_3$ $c=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$		

$M_{45}^{(2,3)}$	$M_{45}^{(3,3)}$	$M_{46}^{(1,3)}$	$M_{47}^{(1,3)}$	$M_{47}^{(2,3)}$	$M_{47}^{(3,3)}$	$M_{47}^{(4,3)}$	$M_{47}^{(5,3)}$
							
1 1 1 121	1 1 2 121	111 111	111 111	111 121	211 121	112 121	212 121

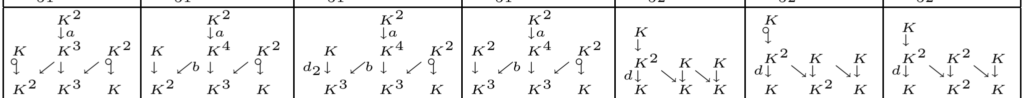
$M_{47}^{(6,3)}$	$M_{47}^{(7,3)}$	$M_{48}^{(1,3)}$	$M_{48}^{(2,3)}$	$M_{48}^{(3,3)}$	$M_{48}^{(4,3)}$	$M_{48}^{(5,3)}$
						
212 131	222 131	1 1 1 1 121	1 1 1 2 121	1 1 1 1 221	1 1 1 2 221	1 1 1 2 131
	$a=\begin{bmatrix}1&1\\0&1\\1&0\end{bmatrix}$			$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	

$M_{48}^{(6,3)}$	$M_{48}^{(7,3)}$	$M_{48}^{(8,3)}$	$M_{48}^{(9,3)}$	$M_{49}^{(1,3)}$	$M_{50}^{(1,3)}$	$M_{50}^{(2,3)}$
						
1 1 1 2 231	1 1 2 2 231	1 2 1 2 231	2 1 1 2 231	11 111 12	1 111 121	1 112 121
$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=d_2\vee d_3$ $b=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$	$a=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$			

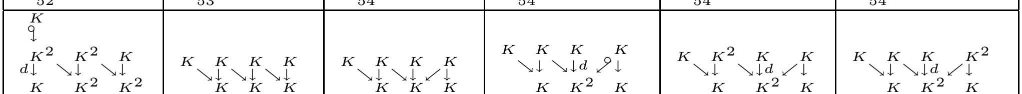
$M_{50}^{(3,3)}$	$M_{50}^{(4,3)}$	$M_{50}^{(5,3)}$	$M_{51}^{(1,3)}$	$M_{51}^{(2,3)}$	$M_{51}^{(3,3)}$	$M_{51}^{(4,3)}$
						
1 112 131	1 212 131	1 212 231	1 111 111	1 111 121	1 111 211	1 112 121
$a=\begin{bmatrix}1&1\\0&1\\0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&1\\0&1&0\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$				



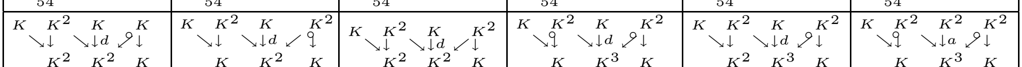
$M_{51}^{(5,3)}$	$M_{51}^{(6,3)}$	$M_{51}^{(7,3)}$	$M_{51}^{(8,3)}$	$M_{51}^{(9,3)}$	$M_{51}^{(10,3)}$	$M_{51}^{(11,3)}$
1 111 221	1 112 221	1 121 221	2 111 221	1 122 221	2 112 221	1 122 231
			$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$		$a=\begin{bmatrix}0&1\\1&0\\1&1\end{bmatrix}$	



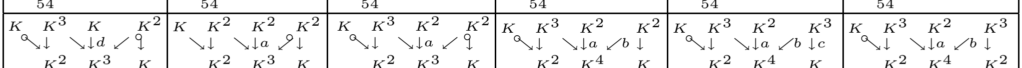
$M_{51}^{(12,3)}$	$M_{51}^{(13,3)}$	$M_{51}^{(14,3)}$	$M_{51}^{(15,3)}$	$M_{52}^{(1,3)}$	$M_{52}^{(2,3)}$	$M_{52}^{(3,3)}$
2 112 231	2 122 231	2 122 331	2 222 331	1 111 111	1 111 121	1 121 121
$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee 0\vee 0\vee d_2$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$			



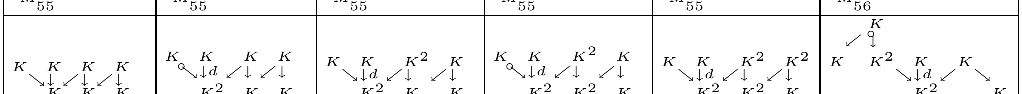
$M_{52}^{(4,3)}$	$M_{53}^{(1,3)}$	$M_{54}^{(1)}$	$M_{54}^{(2)}$	$M_{54}^{(3)}$	$M_{54}^{(4)}$
1 121 122	1111 111	1111 111	1111 121	1211 121	1112 121



$M_{54}^{(5)}$	$M_{54}^{(6)}$	$M_{54}^{(7)}$	$M_{54}^{(8)}$	$M_{54}^{(9)}$	$M_{54}^{(10)}$
1211 221	1212 121	1212 221	1212 131	1212 231	1222 131
					$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$



$M_{54}^{(11)}$	$M_{54}^{(12)}$	$M_{54}^{(13)}$	$M_{54}^{(14)}$	$M_{54}^{(15)}$	$M_{54}^{(16)}$
1312 231	1222 231	1322 231	1322 241	1323 241	1323 242
	$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$	$b=d_1\vee d_4$ $a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$	$b=d_1\vee d_2\vee d_4$ $a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $c=[\,0\ 1\ 0\,]$	$b=d_1\vee d_2\vee d_4$ $a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$



$M_{55}^{(1)}$	$M_{55}^{(2)}$	$M_{55}^{(3)}$	$M_{55}^{(4)}$	$M_{55}^{(5)}$	$M_{56}^{(1)}$
1111 111	1111 211	1121 211	1121 221	1122 221	1 1111 2 1

$M_{56}^{(2)}$	$M_{56}^{(3)}$	$M_{56}^{(4)}$	$M_{56}^{(5)}$	$M_{56}^{(6)}$
K $\swarrow\downarrow$ $K\quad K^2\quad K\quad K^2$ $\searrow\downarrow d\ \swarrow\quad\searrow$ $K^2\qquad K$	K $\swarrow\downarrow$ $K\quad K^2\quad K\quad K^2$ $\searrow\downarrow d\ \swarrow\quad\searrow$ $K^3\qquad K$	K $\swarrow\downarrow$ $K\quad K^2\quad K^2\quad K^2$ $\searrow\downarrow a\ \swarrow\quad\searrow$ $K^3\qquad K$	K^2 $\swarrow\downarrow$ $K\quad K^3\quad K\quad K^2$ $\searrow\downarrow d\ \swarrow\quad\searrow$ $K^3\qquad K$	K^2 $\swarrow\downarrow$ $K\quad K^3\quad K^2\quad K^2$ $\searrow\downarrow a\ \swarrow\quad\searrow$ $K^3\qquad K$
1 1112 2 1	1 1112 3 1	1 1122 3 1	2 1112 3 1	2 1122 3 1
		$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$		$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$

$M_{56}^{(7)}$	$M_{56}^{(8)}$	$M_{56}^{(9)}$	$M_{57}^{(1)}$	$M_{57}^{(2)}$
K^2 $\swarrow\downarrow$ $K\quad K^3\quad K^2\quad K^2$ $\searrow\downarrow a\ \swarrow b\quad\searrow$ $K^4\qquad K$	K^2 $\swarrow\downarrow$ $K\quad K^3\quad K^2\quad K^3$ $\searrow\downarrow a\ \swarrow b\quad c\searrow$ $K^4\qquad K$	K^2 $\swarrow\downarrow$ $K\quad K^3\quad K^2\quad K^3$ $\searrow\downarrow a\ \swarrow b\quad\searrow$ $K^4\qquad K^2$	K $\downarrow$ K^2 $\downarrow$ $K^3\quad K\quad K$ $d\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K\quad K^2\quad K$	K $\downarrow$ K^2 $\downarrow$ $K^3\quad K^2\quad K$ $d\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K\quad K^2\quad K$
2 1122 4 1	2 1123 4 1	2 1123 4 2	1 1 111 121	1 1 121 121
$b=d_1\vee d_4$ $a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$	$b=d_1\vee d_2\vee d_4$ $a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $c=[\,0\ 1\ 0\,]$	$b=d_1\vee d_2\vee d_4$ $a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$		

$M_{57}^{(3)}$	$M_{57}^{(4)}$	$M_{57}^{(5)}$	$M_{57}^{(6)}$	$M_{57}^{(7)}$	$M_{57}^{(8)}$	$M_{57}^{(9)}$
K $\downarrow$ K^2 $\downarrow$ $K^3\quad K\quad K$ $a\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K^2\quad K^2\quad K$	K $\downarrow$ K^2 $\downarrow$ $K^3\quad K^2\quad K$ $d\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K\quad K^2\quad K^2$	K $\downarrow$ K^2 $\downarrow$ $K^3\quad K^2\quad K$ $d\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K\quad K^3\quad K$	K $\downarrow$ K^2 $\downarrow$ $K^3\quad K^2\quad K$ $a\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K^2\quad K^2\quad K$	K $\downarrow$ K^2 $\downarrow$ $K^3\quad K^2\quad K$ $d\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K\quad K^3\quad K^2$	K $\downarrow$ K^2 $\downarrow$ $K^3\quad K^2\quad K$ $a\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K^2\quad K^3\quad K$	K $\downarrow$ K^2 $\downarrow$ $K^3\quad K^2\quad K$ $a\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K^2\quad K^2\quad K^2$
1 1 111 221	1 1 121 122	1 1 121 131	1 1 121 221	1 1 121 132	1 1 121 231	1 1 121 222
$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$			$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$		$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$

$M_{57}^{(10)}$	$M_{57}^{(11)}$	$M_{57}^{(12)}$	$M_{57}^{(13)}$	$M_{57}^{(14)}$	$M_{57}^{(15)}$	$M_{57}^{(16)}$
K $\downarrow$ K^2 $\downarrow$ $K^3\quad K^3\quad K$ $d\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K\quad K^3\quad K^2$	K $\downarrow$ K^2 $a\downarrow$ $K^4\quad K^2\quad K$ $b\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K^2\quad K^3\quad K$	K $\downarrow$ K^3 $\downarrow$ $K^4\quad K^2\quad K$ $a\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K^2\quad K^3\quad K$	K^2 $\downarrow$ K^3 $\downarrow$ $K^4\quad K^2\quad K$ $a\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K^2\quad K^3\quad K$	K $\downarrow$ K^2 $\downarrow$ $K^3\quad K^2\quad K$ $a\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K^2\quad K^3\quad K^2$	K $\downarrow$ K^2 $\downarrow$ $K^3\quad K^3\quad K$ $a\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K^2\quad K^3\quad K^2$	K $\downarrow$ K^2 $a\downarrow$ $K^4\quad K^2\quad K$ $b\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K^2\quad K^3\quad K^2$
1 1 131 132	1 1 221 231	1 2 121 231	2 1 121 231	1 1 121 232	1 1 131 232	1 1 221 232
	$a=d_2\vee d_3$ $b=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$	$a=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=d_2\vee d_3$ $b=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$

$M_{57}^{(17)}$	$M_{57}^{(18)}$	$M_{57}^{(19)}$	$M_{57}^{(20)}$	$M_{57}^{(21)}$	$M_{57}^{(22)}$	$M_{57}^{(23)}$
K $\downarrow$ K^3 $\downarrow$ $K^4\quad K^2\quad K$ $a\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K^2\quad K^3\quad K^2$	K^2 $\downarrow$ K^3 $\downarrow$ $K^4\quad K^2\quad K$ $a\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K^2\quad K^3\quad K^2$	K $\downarrow$ K^2 $a\downarrow$ $K^4\quad K^3\quad K$ $b\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K^2\quad K^3\quad K^2$	K $\downarrow$ K^3 $\downarrow$ $K^4\quad K^3\quad K$ $a\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K^2\quad K^3\quad K^2$	K^2 $\downarrow$ K^3 $\downarrow$ $K^4\quad K^3\quad K$ $a\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K^2\quad K^3\quad K^2$	K $\downarrow$ K^2 $a\downarrow$ $K^4\quad K^3\quad K$ $b\downarrow\ \searrow\downarrow c\ \searrow\downarrow$ $K^2\quad K^4\quad K^2$	K $\downarrow$ K^3 $\downarrow$ $K^4\quad K^3\quad K$ $a\downarrow\ \searrow\downarrow b\ \searrow\downarrow$ $K^2\quad K^4\quad K^2$
1 2 121 232	2 1 121 232	1 1 231 232	1 2 131 232	2 1 131 232	1 1 231 242	1 2 131 242
$a=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$	$a=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=d_2\vee d_3$ $b=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$	$a=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=d_2\vee d_3$ $b=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$ $c=d_1\vee d_2\vee d_4$	$a=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_4$

$M_{57}^{(24)}$	$M_{57}^{(25)}$	$M_{57}^{(26)}$	$M_{57}^{(27)}$	$M_{57}^{(28)}$	$M_{57}^{(29)}$	$M_{57}^{(30)}$
K^2 $\overset{\circ}{\downarrow}$ K^3 $\downarrow$ $K^4 \quad K^3 \quad K$ $a\downarrow \quad \searrow\downarrow b \quad \searrow\downarrow$ $K^2 \quad K^4 \quad K^2$	K^2 $\overset{\circ}{\downarrow}$ K^3 $a\downarrow$ $K^5 \quad K^3 \quad K$ $b\downarrow \quad \searrow\downarrow \quad \overset{\circ}{\searrow}\downarrow$ $K^2 \quad K^4 \quad K^2$	K $\overset{\circ}{\downarrow}$ K^3 $a\downarrow$ $K^5 \quad K^3 \quad K$ $b\downarrow \quad \searrow\downarrow \quad \overset{\circ}{\searrow}\downarrow$ $K^2 \quad K^4 \quad K^2$	K^2 $\overset{\circ}{\downarrow}$ K^4 $\downarrow$ $K^5 \quad K^3 \quad K$ $a\downarrow \quad \searrow\downarrow \quad \overset{\circ}{\searrow}\downarrow$ $K^2 \quad K^4 \quad K^2$	K^2 $\overset{\circ}{\downarrow}$ K^3 $a\downarrow$ $K^5 \quad K^3 \quad K$ $b\downarrow \quad \searrow\downarrow \quad \overset{\circ}{\searrow}\downarrow$ $K^3 \quad K^4 \quad K^2$	K $\overset{\circ}{\downarrow}$ K^3 $a\downarrow$ $K^5 \quad K^3 \quad K$ $b\downarrow \quad \searrow\downarrow \quad \overset{\circ}{\searrow}\downarrow$ $K^3 \quad K^4 \quad K^2$	K^2 $\overset{\circ}{\downarrow}$ K^4 $\downarrow$ $K^5 \quad K^3 \quad K$ $a\downarrow \quad \searrow\downarrow \quad \overset{\circ}{\searrow}\downarrow$ $K^3 \quad K^4 \quad K^2$
2 1 131 242	2 1 231 242	1 2 231 242	2 2 131 242	2 1 231 342	1 2 231 342	2 2 131 342
$a=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_4$	$a=d_2\vee d_3\vee d_4$ $b=\begin{bmatrix}0&1&0&1&1\\1&1&1&0&0\end{bmatrix}$	$a=d_2\vee d_3\vee d_4$ $b=\begin{bmatrix}0&1&1&0&1\\1&1&0&1&0\end{bmatrix}$	$a=\begin{bmatrix}0&1&1&0&1\\1&0&1&1&0\end{bmatrix}$	$a=d_2\vee d_3\vee d_4$ $b=\begin{bmatrix}0&0&0&1&1\\1&0&1&0&0\\0&1&1&1&0\end{bmatrix}$	$a=d_2\vee d_3\vee d_4$ $b=\begin{bmatrix}0&0&0&1&1\\1&1&0&0&0\\0&1&1&1&0\end{bmatrix}$	$a=\begin{bmatrix}1&0&0&0&1\\0&1&1&1&0\\1&1&0&1&0\end{bmatrix}$

$M_{57}^{(31)}$	$M_{57}^{(32)}$	$M_{57}^{(33)}$	$M_{57}^{(34)}$	$M_{57}^{(35)}$	$M_{58}^{(1)}$
K^2 $\overset{\circ}{\downarrow}$ K^4 $\downarrow$ $K^6 \quad K^3 \quad K$ $a\downarrow \quad \searrow\downarrow \quad \overset{\circ}{\searrow}\downarrow$ $K^3 \quad K^4 \quad K^2$	K^2 $\overset{\circ}{\downarrow}$ K^4 $a\downarrow$ $K^6 \quad K^3 \quad K$ $b\downarrow \quad \searrow\downarrow \quad \overset{\circ}{\searrow}\downarrow$ $K^3 \quad K^5 \quad K^2$	K^2 $\overset{\circ}{\downarrow}$ K^4 $a\downarrow$ $K^6 \quad K^4 \quad K$ $b\downarrow \quad \searrow\downarrow \quad \overset{\circ}{\searrow}\downarrow$ $K^3 \quad K^5 \quad K^2$	K^2 $\overset{\circ}{\downarrow}$ K^4 $a\downarrow$ $K^6 \quad K^4 \quad K$ $b\downarrow \quad \searrow\downarrow \quad \overset{\circ}{\searrow}\downarrow$ $K^3 \quad K^5 \quad K^3$	K^2 $\overset{\circ}{\downarrow}$ K^4 $a\downarrow$ $K^6 \quad K^4 \quad K^2$ $b\downarrow \quad \searrow\downarrow \quad \overset{\circ}{\searrow}\downarrow$ $K^3 \quad K^5 \quad K^3$	K $\downarrow$ $K^2 \quad K$ $\downarrow \quad \overset{\circ}{\downarrow} \quad \searrow$ $K^3 \quad K^2 \quad K$ $d\downarrow \quad \searrow\downarrow$ $K \quad K^2$
2 2 231 342	2 2 231 352	2 2 241 352	2 2 241 353	2 2 242 353	1 11 111 12
$a=\begin{bmatrix}1&0&0&0&0&1\\0&1&0&1&1&0\\1&1&1&0&0&0\end{bmatrix}$	$a=d_2\vee d_3\vee d_4\vee d_5$ $b=\begin{bmatrix}0&0&0&1&0&1\\1&0&1&0&1&0\\1&1&0&1&0&0\end{bmatrix}$	$a=d_2\vee d_3\vee d_4\vee d_5$ $b=\begin{bmatrix}0&0&0&1&0&1\\1&1&0&0&1&0\\0&1&1&1&0&0\end{bmatrix}$	$a=d_2\vee d_3\vee d_4\vee d_5$ $b=\begin{bmatrix}0&0&0&1&0&1\\1&1&0&0&1&0\\0&1&1&1&0&0\end{bmatrix}$	$a=d_2\vee d_3\vee d_4\vee d_5$ $b=\begin{bmatrix}0&0&0&1&0&1\\1&0&1&1&0&0\\1&1&0&0&1&0\end{bmatrix}$	

$M_{58}^{(2)}$	$M_{58}^{(3)}$	$M_{58}^{(4)}$	$M_{58}^{(5)}$	$M_{58}^{(6)}$	$M_{58}^{(7)}$	$M_{58}^{(8)}$
K $\downarrow$ $K^2 \quad K$ $\downarrow \quad \overset{\circ}{\downarrow} \quad \searrow$ $K^3 \quad K^2 \quad K$ $a\downarrow \quad \searrow\downarrow$ $K^2 \quad K^2$	K $\overset{\circ}{\downarrow}$ $K^2 \quad K$ $\overset{\circ}{\downarrow} \quad \downarrow \quad \searrow$ $K^3 \quad K^2 \quad K$ $d\downarrow \quad \searrow\downarrow$ $K \quad K^3$	K $\overset{\circ}{\downarrow}$ $K^2 \quad K$ $\overset{\circ}{\downarrow} \quad \downarrow \quad \searrow$ $K^3 \quad K^2 \quad K$ $a\downarrow \quad \searrow\downarrow$ $K^2 \quad K^3$	K $\overset{\circ}{\downarrow}$ $K^2 \quad K^2$ $\overset{\circ}{\downarrow} \quad \downarrow \quad \overset{\circ}{\searrow}$ $K^3 \quad K^3 \quad K$ $d\downarrow \quad \searrow\downarrow$ $K \quad K^3$	K $\overset{\circ}{\downarrow}$ $K^2 \quad K$ $a\downarrow \quad \downarrow \quad \searrow$ $K^4 \quad K^2 \quad K$ $b\downarrow \quad \searrow\downarrow$ $K^2 \quad K^3$	K $\overset{\circ}{\downarrow}$ $K^3 \quad K$ $\downarrow \quad \downarrow \quad \searrow$ $K^4 \quad K^2 \quad K$ $a\downarrow \quad \searrow\downarrow$ $K^2 \quad K^3$	K^2 $\overset{\circ}{\downarrow}$ $K^3 \quad K$ $\downarrow \quad \downarrow \quad \searrow$ $K^4 \quad K^2 \quad K$ $a\downarrow \quad \searrow\downarrow$ $K^2 \quad K^3$
1 11 111 22	1 11 111 13	1 11 111 23	1 12 111 13	1 11 211 23	1 21 111 23	2 11 111 23
$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$		$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$		$a=d_2\vee d_3$ $b=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$	$a=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$

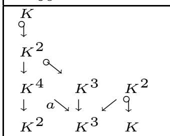
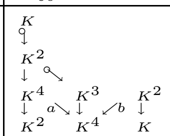
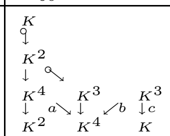
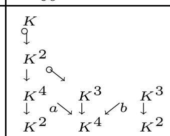
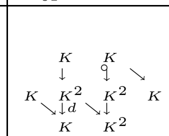
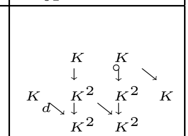
$M_{58}^{(9)}$	$M_{58}^{(10)}$	$M_{58}^{(11)}$	$M_{58}^{(12)}$	$M_{58}^{(13)}$	$M_{58}^{(14)}$	$M_{58}^{(15)}$
K $\overset{\circ}{\downarrow}$ $K^2 \quad K^2$ $\overset{\circ}{\downarrow} \quad \downarrow \quad \overset{\circ}{\searrow}$ $K^3 \quad K^3 \quad K$ $a\downarrow \quad \searrow\downarrow$ $K^2 \quad K^3$	K $\overset{\circ}{\downarrow}$ $K^2 \quad K^2$ $a\downarrow \quad \downarrow \quad \overset{\circ}{\searrow}$ $K^4 \quad K^3 \quad K$ $b\downarrow \quad \searrow\downarrow$ $K^2 \quad K^3$	K $\overset{\circ}{\downarrow}$ $K^3 \quad K^2$ $\downarrow \quad \downarrow \quad \overset{\circ}{\searrow}$ $K^4 \quad K^3 \quad K$ $a\downarrow \quad \searrow\downarrow$ $K^2 \quad K^3$	K^2 $\overset{\circ}{\downarrow}$ $K^3 \quad K^2$ $\downarrow \quad \downarrow \quad \overset{\circ}{\searrow}$ $K^4 \quad K^3 \quad K$ $a\downarrow \quad \searrow\downarrow$ $K^2 \quad K^3$	K $\overset{\circ}{\downarrow}$ $K^2 \quad K^2$ $a\downarrow \quad \downarrow b \quad \searrow$ $K^4 \quad K^3 \quad K$ $c\downarrow \quad \searrow\downarrow e$ $K^2 \quad K^4$	K $\overset{\circ}{\downarrow}$ $K^3 \quad K^2$ $\downarrow \quad \downarrow a \quad \searrow$ $K^4 \quad K^3 \quad K$ $b\downarrow \quad \searrow\downarrow c$ $K^2 \quad K^4$	K^2 $\overset{\circ}{\downarrow}$ $K^3 \quad K^2$ $\downarrow \quad \downarrow a \quad \searrow$ $K^4 \quad K^3 \quad K$ $b\downarrow \quad \searrow\downarrow c$ $K^2 \quad K^4$
1 12 111 23	1 12 211 23	1 22 111 23	2 12 111 23	1 12 211 24	1 22 111 24	2 12 111 24
$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=d_2\vee d_3$ $b=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$	$a=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=d_2\vee d_3$ $b=d_1\vee d_3$ $c=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$ $e=d_1\vee d_2\vee d_4$	$a=d_1\vee d_3$ $b=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$ $c=d_1\vee d_2\vee d_4$	$a=d_1\vee d_3$ $b=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$ $c=d_1\vee d_2\vee d_4$

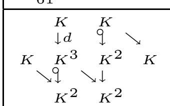
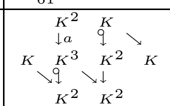
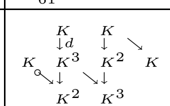
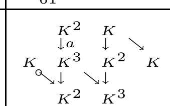
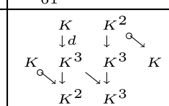
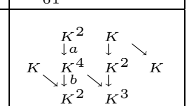
$M_{58}^{(16)}$	$M_{58}^{(17)}$	$M_{58}^{(18)}$	$M_{58}^{(19)}$	$M_{58}^{(20)}$	$M_{58}^{(21)}$
$\begin{array}{ccc} K & & \\ \overset{\circ}{\downarrow} & & \\ K^3 & K^2 & \\ a\downarrow & \downarrow & {}^{\circ}\!\searrow \\ K^5 & K^3 & K \\ b\downarrow & \searrow\downarrow & \\ K^2 & K^4 & \end{array}$	$\begin{array}{ccc} K^2 & & \\ \overset{\circ}{\downarrow} & & \\ K^3 & K^2 & \\ a\downarrow & \downarrow & {}^{\circ}\!\searrow \\ K^5 & K^3 & K \\ b\downarrow & \searrow\downarrow & \\ K^2 & K^4 & \end{array}$	$\begin{array}{ccc} K^2 & & \\ \overset{\circ}{\downarrow} & & \\ K^4 & K^2 & \\ \downarrow & \downarrow & {}^{\circ}\!\searrow \\ K^5 & K^3 & K \\ a\downarrow & \searrow\downarrow & \\ K^2 & K^4 & \end{array}$	$\begin{array}{ccc} K & & \\ \overset{\circ}{\downarrow} & & \\ K^3 & K^2 & \\ a\downarrow & \downarrow & {}^{\circ}\!\searrow \\ K^5 & K^3 & K \\ b\downarrow & \searrow\downarrow & \\ K^3 & K^4 & \end{array}$	$\begin{array}{ccc} K^2 & & \\ \overset{\circ}{\downarrow} & & \\ K^3 & K^2 & \\ a\downarrow & \downarrow & {}^{\circ}\!\searrow \\ K^5 & K^3 & K \\ b\downarrow & \searrow\downarrow & \\ K^3 & K^4 & \end{array}$	$\begin{array}{ccc} K^2 & & \\ \overset{\circ}{\downarrow} & & \\ K^4 & K^2 & \\ \downarrow & \downarrow & {}^{\circ}\!\searrow \\ K^5 & K^3 & K \\ a\downarrow & \searrow\downarrow & \\ K^3 & K^4 & \end{array}$
1 22 211 24	2 12 211 24	2 22 111 24	1 22 211 34	2 12 211 34	2 22 111 34
$a=d_2\vee d_3\vee d_4$ $b=\begin{bmatrix}0&1&1&0&1\\1&1&0&1&0\end{bmatrix}$	$a=d_2\vee d_3\vee d_4$ $b=\begin{bmatrix}0&1&0&1&1\\1&1&1&0&0\end{bmatrix}$	$a=\begin{bmatrix}0&1&1&0&1\\1&0&1&1&0\end{bmatrix}$	$a=d_2\vee d_3\vee d_4$ $b=\begin{bmatrix}0&0&0&1&1\\1&1&0&0&0\\0&1&1&1&0\end{bmatrix}$	$a=d_2\vee d_3\vee d_4$ $b=\begin{bmatrix}0&0&0&1&1\\1&0&1&0&0\\0&1&1&1&0\end{bmatrix}$	$a=\begin{bmatrix}1&0&0&0&1\\0&1&1&1&0\\1&1&0&1&0\end{bmatrix}$

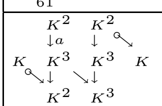
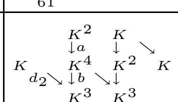
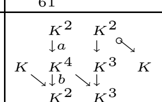
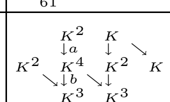
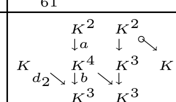
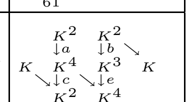
$M_{58}^{(22)}$	$M_{58}^{(23)}$	$M_{58}^{(24)}$	$M_{58}^{(25)}$	$M_{58}^{(26)}$	$M_{59}^{(1)}$
$\begin{array}{ccc} K^2 & & \\ \overset{\circ}{\downarrow} & & \\ K^4 & K^2 & \\ \downarrow & \downarrow & {}^{\circ}\!\searrow \\ K^6 & K^3 & K \\ a\downarrow & \searrow\downarrow & \\ K^3 & K^4 & \end{array}$	$\begin{array}{ccc} K^2 & & \\ \overset{\circ}{\downarrow} & & \\ K^4 & K^2 & \\ a\downarrow & \downarrow & {}^{\circ}\!\searrow \\ K^6 & K^3 & K \\ b\downarrow & \searrow\downarrow & \\ K^3 & K^5 & \end{array}$	$\begin{array}{ccc} K^2 & & \\ \overset{\circ}{\downarrow} & & \\ K^4 & K^2 & \\ a\downarrow & \downarrow & {}^{\circ}\!\searrow \\ K^6 & K^4 & K \\ b\downarrow & \searrow\downarrow & \\ K^3 & K^5 & \end{array}$	$\begin{array}{ccc} K^2 & & \\ \overset{\circ}{\downarrow} & & \\ K^4 & K^3 & \\ a\downarrow & \downarrow & {}^{\circ}\!\searrow \\ K^6 & K^4 & K \\ b\downarrow & \searrow\downarrow & \\ K^3 & K^5 & \end{array}$	$\begin{array}{ccc} K^2 & & \\ \overset{\circ}{\downarrow} & & \\ K^4 & K^3 & \\ a\downarrow & \downarrow & {}^{\circ}\!\searrow \\ K^6 & K^4 & K^2 \\ b\downarrow & \searrow\downarrow & \\ K^3 & K^5 & \end{array}$	$\begin{array}{ccc} K & \to\ K^2 & \\ \overset{\circ}{\downarrow} & \downarrow a & \\ K^2 & K^3 & K \\ \downarrow & \swarrow\ \overset{\circ}{\downarrow} & \swarrow\downarrow \\ K^2 & K^2 & K \end{array}$
2 22 211 34	2 22 211 35	2 22 221 35	2 23 211 35	2 23 212 35	11 111 221
$a=\begin{bmatrix}1&0&0&0&0&1\\0&1&0&1&1&0\\1&1&1&0&0&0\end{bmatrix}$	$a=d_2\vee d_3\vee d_4\vee d_5$ $b=\begin{bmatrix}0&0&0&1&0&1\\1&0&1&0&1&0\\1&1&0&1&0&0\end{bmatrix}$	$a=d_2\vee d_3\vee d_4\vee d_5$ $b=\begin{bmatrix}0&0&0&1&0&1\\1&1&0&0&1&0\\0&1&1&1&0&0\end{bmatrix}$	$a=d_2\vee d_3\vee d_4\vee d_5$ $b=\begin{bmatrix}0&0&0&1&0&1\\1&1&0&0&1&0\\0&1&1&1&0&0\end{bmatrix}$	$a=d_2\vee d_3\vee d_4\vee d_5$ $b=\begin{bmatrix}0&0&0&1&0&1\\1&0&1&1&0&0\\1&1&0&0&1&0\end{bmatrix}$	$a=\begin{bmatrix}0&1\\1&0\\1&1\end{bmatrix}$

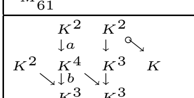
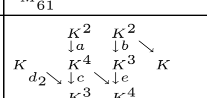
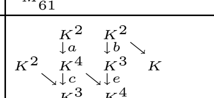
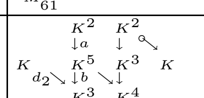
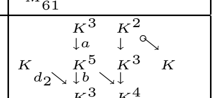
$M_{59}^{(2)}$	$M_{59}^{(3)}$	$M_{59}^{(4)}$	$M_{59}^{(5)}$	$M_{59}^{(6)}$	$M_{59}^{(7)}$
$\begin{array}{ccc} K & \to\ K^2 & \\ d\downarrow & \downarrow & \\ K^2 & K^3 & K^2 \\ \downarrow & \swarrow a\ \downarrow & \swarrow\ \overset{\circ}{\downarrow} \\ K^2 & K^2 & K \end{array}$	$\begin{array}{ccc} K & \circ\!\!\longrightarrow K^2 & \\ \overset{\circ}{\downarrow} & \overset{\circ}{\downarrow} & \\ K^2 & K^3 & K^2 \\ \downarrow & \swarrow a\ \downarrow & \swarrow\ \overset{\circ}{\downarrow} \\ K^2 & K^3 & K \end{array}$	$\begin{array}{ccc} K & \circ\!\!\longrightarrow K^2 & \\ \overset{\circ}{\downarrow} & \downarrow a & \\ K^2 & K^4 & K^2 \\ \downarrow & \swarrow b\ \downarrow & \swarrow\ \overset{\circ}{\downarrow} \\ K^2 & K^3 & K \end{array}$	$\begin{array}{ccc} K & \circ\!\!\longrightarrow K^3 & \\ \overset{\circ}{\downarrow} & \downarrow & \\ K^2 & K^4 & K^2 \\ \downarrow & \swarrow a\ \downarrow & \swarrow\ \overset{\circ}{\downarrow} \\ K^2 & K^3 & K \end{array}$	$\begin{array}{ccc} K & \circ\!\!\longrightarrow K^2 & \\ \overset{\circ}{\downarrow} & \downarrow a & \\ K^2 & K^4 & K^2 \\ \overset{\circ}{\downarrow} & \swarrow b\ \downarrow & \swarrow\ \overset{\circ}{\downarrow} \\ K^3 & K^3 & K \end{array}$	$\begin{array}{ccc} K & \circ\!\!\longrightarrow K^3 & \\ \overset{\circ}{\downarrow} & \downarrow & \\ K^2 & K^4 & K^2 \\ \overset{\circ}{\downarrow} & \swarrow a\ \downarrow & \swarrow\ \overset{\circ}{\downarrow} \\ K^3 & K^3 & K \end{array}$
11 112 221	11 112 231	11 122 231	12 112 231	11 122 331	12 112 331
$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=d_2\vee d_3$ $b=\begin{bmatrix}0&1&0&1\\1&1&1&0\end{bmatrix}$	$a=\begin{bmatrix}1&1&0&1\\1&0&1&0\end{bmatrix}$	$a=d_2\vee d_3$ $b=\begin{bmatrix}0&1&0&1\\1&1&0&0\\1&0&1&0\end{bmatrix}$	$a=\begin{bmatrix}1&0&0&1\\0&1&0&1\\1&0&1&0\end{bmatrix}$

$M_{59}^{(8)}$	$M_{59}^{(9)}$	$M_{59}^{(10)}$	$M_{59}^{(11)}$	$M_{60}^{(1)}$	$M_{60}^{(2)}$
$\begin{array}{ccc} K & \circ\!\!\longrightarrow K^3 & \\ \overset{\circ}{\downarrow} & \downarrow & \\ K^2 & K^5 & K^2 \\ \downarrow & \swarrow a\ \downarrow & \swarrow\ \overset{\circ}{\downarrow} \\ K^3 & K^3 & K \end{array}$	$\begin{array}{ccc} K & \circ\!\!\longrightarrow K^3 & \\ \overset{\circ}{\downarrow} & \downarrow & \\ K^2 & K^5 & K^2 \\ \downarrow & \swarrow a\ \downarrow & \swarrow b\ \overset{\circ}{\downarrow} \\ K^3 & K^4 & K \end{array}$	$\begin{array}{ccc} K & \circ\!\!\longrightarrow K^3 & \\ \overset{\circ}{\downarrow} & \downarrow & \\ K^2 & K^5 & K^3 \\ \downarrow & \swarrow a\ \downarrow & \swarrow b\ \overset{\circ}{\downarrow} \\ K^3 & K^4 & K \end{array}$	$\begin{array}{ccc} K & \circ\!\!\longrightarrow K^3 & \\ \overset{\circ}{\downarrow} & \downarrow & \\ K^2 & K^5 & K^3 \\ \downarrow & \swarrow a\ \downarrow & \swarrow b\ \downarrow c \\ K^3 & K^4 & K^2 \end{array}$	$\begin{array}{ccc} K & & \\ \overset{\circ}{\downarrow} & & \\ K^2 & {}^{\circ}\!\searrow & \\ \overset{\circ}{\downarrow} & & \\ K^3 & K^3 & K^2 \\ d\downarrow & \searrow\downarrow & \swarrow\ \overset{\circ}{\downarrow} \\ K & K^3 & K \end{array}$	$\begin{array}{ccc} K & & \\ \overset{\circ}{\downarrow} & & \\ K^2 & {}^{\circ}\!\searrow & \\ \downarrow & & \\ K^3 & K^3 & K^2 \\ a\downarrow & b\searrow\ \downarrow & \swarrow\ \overset{\circ}{\downarrow} \\ K^2 & K^3 & K \end{array}$
12 122 331	12 122 341	12 123 341	12 123 342	1 1 112 131	1 1 112 231
$a=\begin{bmatrix}0&1&0&1&0\\1&1&1&0&0\\1&0&0&0&1\end{bmatrix}$	$a=\begin{bmatrix}0&1&0&1&0\\1&1&1&0&0\\1&0&0&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0\\0&1\\0&0\\1&1\end{bmatrix}$	$a=\begin{bmatrix}0&1&0&1&0\\0&1&1&0&0\\1&0&0&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0&1\\0&1&0\\0&0&1\\1&1&0\end{bmatrix}$	$a=\begin{bmatrix}0&1&0&1&0\\0&1&1&0&0\\1&0&0&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0&1\\0&1&0\\0&0&1\\1&1&0\end{bmatrix}$ $c=\begin{bmatrix}0&1&1\\1&0&1\end{bmatrix}$		$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$ $b=d_2\vee d_3\vee d_1$

$M_{60}^{(3)}$	$M_{60}^{(4)}$	$M_{60}^{(5)}$	$M_{60}^{(6)}$	$M_{61}^{(1)}$	$M_{61}^{(2)}$
					
1 1 212 231	1 1 212 241	1 1 213 241	1 1 213 242	11 1111 12	11 1111 22
$a=\begin{bmatrix}0&0&1&1\\1&0&1&0\\0&1&0&1\end{bmatrix}$	$a=\begin{bmatrix}0&0&0&1\\1&0&1&1\\0&1&0&1\\0&0&1&0\end{bmatrix}$ $b=d_1\vee d_4$	$a=\begin{bmatrix}0&0&0&1\\1&0&1&1\\0&1&0&1\\0&0&1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_4$ $c=[\,0\ 1\ 0\,]$	$a=\begin{bmatrix}0&0&1&1\\1&0&1&0\\0&1&0&1\\0&0&1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_4$		

$M_{61}^{(3)}$	$M_{61}^{(4)}$	$M_{61}^{(5)}$	$M_{61}^{(6)}$	$M_{61}^{(7)}$	$M_{61}^{(8)}$
					
11 1211 22	21 1111 22	11 1211 23	21 1111 23	12 1211 23	21 1211 23
	$a=\begin{bmatrix}0&1\\1&0\\1&1\end{bmatrix}$		$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$		$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee 0\vee 0\vee d_2$

$M_{61}^{(9)}$	$M_{61}^{(10)}$	$M_{61}^{(11)}$	$M_{61}^{(12)}$	$M_{61}^{(13)}$	$M_{61}^{(14)}$
					
22 1111 23	21 1211 33	22 1211 23	21 2211 33	22 1211 33	22 1211 24
$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee 0\vee 0\vee d_2$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_3$ $c=d_1\vee 0\vee 0\vee d_2$ $e=d_1\vee d_2\vee d_4$

$M_{61}^{(15)}$	$M_{61}^{(16)}$	$M_{61}^{(17)}$	$M_{61}^{(18)}$	$M_{61}^{(19)}$
				
22 2211 33	22 1211 34	22 2211 34	22 1311 34	32 1211 34
$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_3$ $c=d_1\vee d_2\vee 0\vee d_3$ $e=d_1\vee d_2\vee d_4$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_3$ $c=d_1\vee d_2\vee 0\vee d_3$ $e=d_1\vee d_2\vee d_4$	$a=\begin{bmatrix}1&0\\1&1\\1&0\\0&1\\0&1\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$	$a=\begin{bmatrix}1&0&0\\0&1&1\\1&1&1\\1&1&0\\1&0&1\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$

$M_{61}^{(20)}$	$M_{61}^{(21)}$	$M_{61}^{(22)}$	$M_{61}^{(23)}$	$M_{61}^{(24)}$
$\begin{array}{cccc} & K^2 & K^2 & \\ & \downarrow a & \downarrow & \overset{\circ}{\searrow} \\ K^2 & K^5 & K^3 & K \\ & \searrow\downarrow b & \searrow\downarrow & \\ & K^3 & K^4 & \end{array}$	$\begin{array}{cccc} & K^3 & K^2 & \\ & \downarrow a & \downarrow & \overset{\circ}{\searrow} \\ K^2 & K^5 & K^3 & K \\ & \searrow\downarrow b & \searrow\downarrow & \\ & K^3 & K^4 & \end{array}$	$\begin{array}{cccc} & K^2 & K^2 & \\ & \downarrow a & \downarrow & \overset{\circ}{\searrow} \\ K^2 & K^5 & K^3 & K \\ & b\searrow\downarrow c & \searrow\downarrow & \\ & K^4 & K^4 & \end{array}$	$\begin{array}{cccc} & K^3 & K^2 & \\ & \downarrow a & \downarrow & \overset{\circ}{\searrow} \\ K^2 & K^5 & K^3 & K \\ & b\searrow\downarrow c & \searrow\downarrow & \\ & K^4 & K^4 & \end{array}$	$\begin{array}{cccc} & K^3 & K^2 & \\ & \downarrow a & \downarrow & \overset{\circ}{\searrow} \\ K^2 & K^6 & K^3 & K \\ & \searrow\downarrow b & \searrow\downarrow & \\ & K^4 & K^4 & \end{array}$
$\begin{array}{c}22\\2311\\34\end{array}$	$\begin{array}{c}32\\2211\\34\end{array}$	$\begin{array}{c}22\\2311\\44\end{array}$	$\begin{array}{c}32\\2211\\44\end{array}$	$\begin{array}{c}32\\2311\\44\end{array}$
$a=\begin{bmatrix}1&1\\1&0\\1&1\\0&1\\1&1\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$	$a=\begin{bmatrix}0&1&1\\0&1&0\\1&1&1\\1&0&0\\1&0&1\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$	$a=\begin{bmatrix}1&0\\1&0\\1&1\\0&1\\0&1\end{bmatrix}$ $b=d_2\vee d_3$ $c=d_1\vee d_2\vee d_3\vee 0\vee d_4$	$a=\begin{bmatrix}1&0&0\\1&1&1\\0&1&0\\0&1&1\\1&0&1\end{bmatrix}$ $b=d_2\vee d_3$ $c=d_1\vee d_2\vee d_3\vee 0\vee d_4$	$a=\begin{bmatrix}1&0&0\\1&1&0\\0&1&0\\1&1&1\\0&0&1\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3\vee d_4$

$M_{61}^{(25)}$	$M_{61}^{(26)}$	$M_{61}^{(27)}$	$M_{61}^{(28)}$	$M_{62}^{(1)}$
$\begin{array}{cccc} & K^3 & K^2 & \\ & \downarrow a & \downarrow & \overset{\circ}{\searrow} \\ K^2 & K^6 & K^3 & K \\ & b\searrow\downarrow c & \searrow\downarrow & \\ & K^4 & K^5 & \end{array}$	$\begin{array}{cccc} & K^3 & K^2 & \\ & \downarrow a & \downarrow & \overset{\circ}{\searrow} \\ K^2 & K^6 & K^4 & K \\ & b\searrow\downarrow c & \searrow\downarrow & \\ & K^4 & K^5 & \end{array}$	$\begin{array}{cccc} & K^3 & K^3 & \\ & \downarrow a & \downarrow & \overset{\circ}{\searrow} \\ K^2 & K^6 & K^4 & K \\ & b\searrow\downarrow c & \searrow\downarrow & \\ & K^4 & K^5 & \end{array}$	$\begin{array}{cccc} & K^3 & K^3 & \\ & \downarrow a & \downarrow & \overset{\circ}{\searrow} \\ K^2 & K^6 & K^4 & K^2 \\ & b\searrow\downarrow c & \searrow\downarrow & \\ & K^4 & K^5 & \end{array}$	$\begin{array}{ccc} K & K & K \\ \downarrow & \overset{\circ}{\downarrow} & \searrow\downarrow \\ K^2 & K^2 & K \\ d\downarrow & \searrow\downarrow & \\ K & K^2 & \end{array}$
$\begin{array}{c}32\\2311\\45\end{array}$	$\begin{array}{c}32\\2321\\45\end{array}$	$\begin{array}{c}33\\2311\\45\end{array}$	$\begin{array}{c}33\\2312\\45\end{array}$	$\begin{array}{c}111\\111\\12\end{array}$
$a=\begin{bmatrix}1&1&0\\0&1&1\\0&1&0\\1&1&1\\1&0&0\\1&1&1\end{bmatrix}$ $b=d_2\vee d_3$ $c=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$	$a=\begin{bmatrix}1&1&0\\1&0&0\\1&1&1\\0&1&1\\0&1&0\\0&1&1\end{bmatrix}$ $b=d_2\vee d_3$ $c=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$	$a=\begin{bmatrix}1&1&0\\1&0&0\\1&1&1\\0&1&1\\0&1&0\\0&1&1\end{bmatrix}$ $b=d_2\vee d_3$ $c=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$	$a=\begin{bmatrix}1&1&0\\1&0&0\\1&0&1\\0&1&1\\0&1&0\\0&1&1\end{bmatrix}$ $b=d_2\vee d_3$ $c=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$	

$M_{63}^{(1)}$	$M_{63}^{(2)}$	$M_{63}^{(3)}$	$M_{63}^{(4)}$	$M_{63}^{(5)}$
$\begin{array}{cccc} K & & K & \\ \downarrow\ \searrow & & \downarrow d\ \searrow & \\ K^2 & K^2 & K^2 & K \\ \downarrow & \searrow\downarrow & \swarrow & \\ K & K^2 & & \end{array}$	$\begin{array}{cccc} K & & K & \\ \downarrow\ \searrow & & \overset{\circ}{\downarrow}\ \searrow & \\ K^2 & K^2 & K^2 & K \\ \downarrow & a\searrow\downarrow & \overset{\circ}{\swarrow} & \\ K & K^3 & & \end{array}$	$\begin{array}{cccc} K & & K^2 & \\ \downarrow\ \searrow & & \overset{\circ}{\downarrow}\ \searrow & \\ K^2 & K^2 & K^3 & K \\ \downarrow & a\searrow\downarrow & \swarrow & \\ K & K^3 & & \end{array}$	$\begin{array}{cccc} K & & K & \\ \downarrow\ \searrow & & \overset{\circ}{\downarrow}\ \searrow & \\ K^3 & K^2 & K^2 & K \\ \downarrow & a\searrow\downarrow & \overset{\circ}{\swarrow} & \\ K & K^3 & & \end{array}$	$\begin{array}{cccc} K & & K^2 & \\ \overset{\circ}{\downarrow}\ \searrow & & \overset{\circ}{\downarrow}\ \searrow & \\ K^3 & K^2 & K^3 & K \\ \overset{\circ}{\downarrow} & a\searrow\downarrow & \swarrow & \\ K & K^3 & & \end{array}$
$\begin{array}{c}1\ 1\\1111\\12\end{array}$	$\begin{array}{c}1\ 1\\1111\\13\end{array}$	$\begin{array}{c}1\ 2\\1111\\13\end{array}$	$\begin{array}{c}1\ 1\\2111\\13\end{array}$	$\begin{array}{c}1\ 2\\2111\\13\end{array}$
	$a=\begin{bmatrix}1&1\\0&1\\0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1\\0&1\\0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&1\\0&1&0\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&1\\1&0&0\\0&1&0\end{bmatrix}$

$M_{63}^{(6)}$	$M_{63}^{(7)}$	$M_{63}^{(8)}$	$M_{63}^{(9)}$	$M_{63}^{(10)}$
$\begin{array}{cccc} K & & K & \\ \downarrow\ \searrow & & \overset{\circ}{\downarrow}\ \searrow & \\ K^3 & K^2 & K^2 & K \\ a\downarrow & \searrow\downarrow & \overset{\circ}{\swarrow} & \\ K^2 & K^3 & & \end{array}$	$\begin{array}{cccc} K & & K^2 & \\ \overset{\circ}{\downarrow}\ \overset{\circ}{\searrow} & & \overset{\circ}{\downarrow}\ \searrow & \\ K^3 & K^2 & K^3 & K \\ \overset{\circ}{\downarrow} & a\searrow\downarrow b & \swarrow & \\ K & K^4 & & \end{array}$	$\begin{array}{cccc} K & & K^2 & \\ \downarrow\ \searrow & & \overset{\circ}{\downarrow}\ \searrow & \\ K^3 & K^2 & K^3 & K \\ \downarrow & a\searrow\downarrow & \swarrow & \\ K^2 & K^3 & & \end{array}$	$\begin{array}{cccc} K & & K^2 & \\ \overset{\circ}{\downarrow}\ \overset{\circ}{\searrow} & & \overset{\circ}{\downarrow}\ \searrow & \\ K^3 & K^3 & K^3 & K \\ \overset{\circ}{\downarrow} & a\searrow\downarrow b & \swarrow & \\ K & K^4 & & \end{array}$	$\begin{array}{cccc} K & & K^2 & \\ \overset{\circ}{\downarrow}\ \overset{\circ}{\searrow} & & \overset{\circ}{\downarrow}\ \searrow & \\ K^3 & K^2 & K^3 & K \\ \overset{\circ}{\downarrow} & a\searrow\downarrow b & \swarrow & \\ K^2 & K^4 & & \end{array}$
$\begin{array}{c}1\ 1\\2111\\23\end{array}$	$\begin{array}{c}1\ 2\\2111\\14\end{array}$	$\begin{array}{c}1\ 2\\2111\\23\end{array}$	$\begin{array}{c}1\ 2\\2211\\14\end{array}$	$\begin{array}{c}1\ 2\\2111\\24\end{array}$
$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}0&1&0\\1&1&0\\0&1&0\\1&0&1\end{bmatrix}$ $b=d_1\vee d_4$	$a=\begin{bmatrix}1&0&1\\0&1&1\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&0\\1&0&0\\0&1&0\\1&0&1\end{bmatrix}$ $b=d_1\vee d_2\vee d_4$	$a=\begin{bmatrix}1&0&0\\0&1&0\\0&0&0\\1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0\\1&0\\1&0\\0&1\end{bmatrix}$

$M_{63}^{(11)}$	$M_{63}^{(12)}$	$M_{63}^{(13)}$	$M_{63}^{(14)}$	$M_{63}^{(15)}$
$\begin{array}{cccc} K & & K^2 & \\ \overset{\circ}{\downarrow}\ \overset{\circ}{\searrow} & & \overset{\circ}{\downarrow}\ \searrow & \\ K^3 & K^3 & K^3 & K \\ \overset{\circ}{\downarrow} & a\searrow\downarrow b & \swarrow & \\ K^2 & K^4 & & \end{array}$	$\begin{array}{cccc} K^2 & & K^2 & \\ \overset{\circ}{\downarrow}\ a\searrow & & \overset{\circ}{\downarrow}\ \searrow & \\ K^4 & K^3 & K^3 & K \\ \overset{\circ}{\downarrow} & b\searrow\downarrow c & \swarrow & \\ K^2 & K^4 & & \end{array}$	$\begin{array}{cccc} K & & K^2 & \\ \overset{\circ}{\downarrow}\ \overset{\circ}{\searrow} & & \overset{\circ}{\downarrow}\ \searrow & \\ K^4 & K^2 & K^3 & K \\ \overset{\circ}{\downarrow} & a\searrow\downarrow b & \swarrow & \\ K^2 & K^4 & & \end{array}$	$\begin{array}{cccc} K & & K^2 & \\ \overset{\circ}{\downarrow}\ \overset{\circ}{\searrow} & & \overset{\circ}{\downarrow}\ \searrow & \\ K^4 & K^3 & K^3 & K \\ \overset{\circ}{\downarrow} & a\searrow\downarrow b & \swarrow & \\ K^2 & K^4 & & \end{array}$	$\begin{array}{cccc} K & & K^2 & \\ \overset{\circ}{\downarrow}\ \overset{\circ}{\searrow} & & \overset{\circ}{\downarrow}\ \searrow & \\ K^4 & K^3 & K^3 & K \\ a\downarrow & b\searrow\downarrow c & \swarrow & \\ K^2 & K^5 & & \end{array}$
$\begin{array}{c}1\ 2\\2211\\24\end{array}$	$\begin{array}{c}2\ 2\\2111\\24\end{array}$	$\begin{array}{c}1\ 2\\3111\\24\end{array}$	$\begin{array}{c}1\ 2\\3211\\24\end{array}$	$\begin{array}{c}1\ 2\\3211\\25\end{array}$
$a=\begin{bmatrix}1&0&0\\0&1&0\\0&0&0\\1&0&1\end{bmatrix}$ $b=\begin{bmatrix}0&1&0\\1&1&0\\1&0&0\\0&0&1\end{bmatrix}$	$a=d_1\vee d_3$ $b=\begin{bmatrix}0&1&1&0\\1&1&0&0\\0&1&0&0\\1&0&0&1\end{bmatrix}$ $c=d_1\vee d_2\vee d_4$	$a=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0\\1&0\\1&0\\0&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&1&0\\0&1&0\\1&0&0\\0&0&1\end{bmatrix}$	$a=0\vee d_1\vee 0\vee d_2$ $b=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&0&0\\0&0&1&0\\1&0&0&1\end{bmatrix}$ $c=\begin{bmatrix}1&0&0\\1&1&0\\1&0&0\\0&1&0\\0&0&1\end{bmatrix}$

$M_{63}^{(16)}$	$M_{63}^{(17)}$	$M_{63}^{(18)}$	$M_{64}^{(1)}$
$K \qquad K^3$ $\downarrow \searrow \quad \downarrow \searrow$ $K^4 \quad K^3 \quad K^4 \quad K$ $\downarrow \quad a\searrow \downarrow b \swarrow$ $K^2 \quad K^5$	$K \qquad K^2$ $\downarrow \searrow \quad \downarrow \searrow$ $K^4 \quad K^3 \quad K^4 \quad K$ $\downarrow \quad a\searrow \downarrow b \swarrow$ $K^2 \quad K^5$	$K \qquad K^3$ $\downarrow \searrow \quad \downarrow \searrow$ $K^4 \quad K^3 \quad K^4 \quad K^2$ $\downarrow \quad a\searrow \downarrow b \swarrow$ $K^2 \quad K^5$	K $\downarrow \searrow$ $K^2 \quad K^2 \quad K \quad K$ $\downarrow \quad \searrow\downarrow \swarrow d \quad \downarrow \swarrow$ $K \quad K^2 \quad K$
1 3 3211 25	1 2 3221 25	1 3 3212 25	1 1111 121
$a=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&0&0&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0&0\\1&1&0\\1&0&0\\0&1&0\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&0&0&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0&0\\1&1&0\\1&0&0\\0&1&0\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&0&0&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0&0\\0&1&0\\1&1&0\\0&1&0\\0&0&1\end{bmatrix}$	

$M_{64}^{(2)}$	$M_{64}^{(3)}$	$M_{64}^{(4)}$	$M_{64}^{(5)}$	$M_{64}^{(6)}$
K $\downarrow \searrow$ $K^2 \quad K^2 \quad K^2 \quad K$ $\downarrow \quad \searrow\downarrow \swarrow\downarrow d \swarrow$ $K \quad K^2 \quad K$	K $\downarrow \searrow$ $K^2 \quad K^2 \quad K^2 \quad K$ $\downarrow \quad a\searrow\downarrow \swarrow\downarrow \swarrow$ $K \quad K^3 \quad K$	K $\downarrow \searrow$ $K^2 \quad K^2 \quad K^2 \quad K$ $\downarrow \quad \searrow\downarrow \swarrow\downarrow \swarrow d$ $K \quad K^2 \quad K^2$	K $\downarrow \searrow$ $K^3 \quad K^2 \quad K^2 \quad K$ $\downarrow \quad a\searrow\downarrow \swarrow\downarrow \swarrow$ $K \quad K^3 \quad K$	K $\downarrow \searrow$ $K^2 \quad K^2 \quad K^2 \quad K$ $\downarrow \quad a\searrow\downarrow \swarrow\downarrow \swarrow$ $K \quad K^3 \quad K^2$
1 1121 121	1 1121 131	1 1121 122	1 2121 131	1 1121 132
	$a=\begin{bmatrix}1&1\\0&1\\0&1\end{bmatrix}$		$a=\begin{bmatrix}1&1&1\\0&1&0\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1\\0&1\\0&1\end{bmatrix}$

$M_{64}^{(7)}$	$M_{64}^{(8)}$	$M_{64}^{(9)}$	$M_{64}^{(10)}$	$M_{64}^{(11)}$
K $\downarrow \searrow$ $K^3 \quad K^2 \quad K^2 \quad K$ $a\downarrow \quad \searrow\downarrow \swarrow\downarrow \swarrow$ $K^2 \quad K^3 \quad K$	K $\downarrow \searrow$ $K^3 \quad K^2 \quad K^2 \quad K$ $\downarrow \quad a\searrow\downarrow \swarrow\downarrow \swarrow$ $K \quad K^3 \quad K^2$	K $\downarrow \searrow$ $K^2 \quad K^2 \quad K^3 \quad K$ $\downarrow \quad a\searrow\downarrow \swarrow\downarrow \swarrow$ $K \quad K^3 \quad K^2$	K $\downarrow \searrow$ $K^3 \quad K^2 \quad K^2 \quad K$ $a\downarrow \quad \searrow\downarrow \swarrow\downarrow \swarrow$ $K^2 \quad K^3 \quad K^2$	K $\downarrow \searrow$ $K^3 \quad K^2 \quad K^3 \quad K$ $\downarrow \quad a\searrow\downarrow \swarrow\downarrow \swarrow$ $K \quad K^3 \quad K^2$
1 2121 231	1 2121 132	1 1131 132	1 2121 232	1 2131 132
$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&1\\0&1&0\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1\\0&1\\0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&0\\1&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&1\\1&0&0\\0&1&0\end{bmatrix}$

$M_{64}^{(12)}$	$M_{64}^{(13)}$	$M_{64}^{(14)}$	$M_{64}^{(15)}$	$M_{64}^{(16)}$
K $\downarrow \searrow$ $K^3 \quad K^2 \quad K^3 \quad K$ $\downarrow \quad a\searrow\downarrow \swarrow\downarrow \swarrow$ $K^2 \quad K^3 \quad K^2$	K $\downarrow \searrow$ $K^3 \quad K^2 \quad K^3 \quad K$ $\downarrow \quad a\searrow\downarrow b \swarrow\downarrow \swarrow$ $K \quad K^4 \quad K^2$	K $\downarrow \searrow$ $K^3 \quad K^2 \quad K^3 \quad K$ $\downarrow \quad a\searrow\downarrow b \swarrow\downarrow \swarrow$ $K^2 \quad K^4 \quad K^2$	K $\downarrow \searrow$ $K^3 \quad K^3 \quad K^3 \quad K$ $\downarrow \quad a\searrow\downarrow b \swarrow\downarrow \swarrow$ $K \quad K^4 \quad K^2$	K^2 $\downarrow \quad a\searrow$ $K^4 \quad K^3 \quad K^3 \quad K$ $\downarrow \quad b\searrow\downarrow c \swarrow\downarrow \swarrow$ $K^2 \quad K^4 \quad K^2$
1 2131 232	1 2131 142	1 2131 242	1 2231 142	2 2131 242
$a=\begin{bmatrix}1&0&1\\0&1&1\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}0&1&0\\1&1&0\\0&1&0\\1&0&1\end{bmatrix}$ $b=d_1\vee d_4$	$a=\begin{bmatrix}1&0&0\\0&1&0\\0&0&0\\1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0\\1&0\\1&0\\0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1&0\\1&0&0\\0&1&0\\1&0&1\end{bmatrix}$ $b=d_1\vee d_2\vee d_4$	$a=d_1\vee d_3$ $b=\begin{bmatrix}0&1&1&0\\1&1&0&0\\0&1&0&0\\1&0&0&1\end{bmatrix}$ $b=d_1\vee d_2\vee d_4$

$M_{64}^{(17)}$	$M_{64}^{(18)}$	$M_{64}^{(19)}$	$M_{64}^{(20)}$
K $\downarrow \searrow$ $K^4 \quad K^2 \quad K^3 \quad K$ $\downarrow \quad a\searrow\downarrow b \swarrow\downarrow \swarrow$ $K^2 \quad K^4 \quad K^2$	K $\downarrow \searrow$ $K^3 \quad K^3 \quad K^3 \quad K$ $\downarrow \quad a\searrow\downarrow b \swarrow\downarrow \swarrow$ $K^2 \quad K^4 \quad K^2$	K $\downarrow \searrow$ $K^4 \quad K^3 \quad K^3 \quad K$ $\downarrow \quad a\searrow\downarrow b \swarrow\downarrow \swarrow$ $K^2 \quad K^4 \quad K^2$	K $\downarrow \searrow$ $K^4 \quad K^3 \quad K^3 \quad K$ $a\downarrow \quad b\searrow\downarrow c \swarrow\downarrow \swarrow$ $K^2 \quad K^5 \quad K^2$
1 3131 242	1 2231 242	1 3231 242	1 3231 252
$a=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0\\1&0\\1&0\\0&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&0\\0&1&0\\0&0&0\\1&0&1\end{bmatrix}$ $b=\begin{bmatrix}0&1&0\\1&1&0\\1&0&0\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&1&0\\0&1&0\\1&0&0\\0&0&1\end{bmatrix}$	$a=0\vee d_1\vee 0\vee d_2$ $b=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&0&0\\0&0&1&0\\1&0&0&1\end{bmatrix}$ $c=\begin{bmatrix}1&0&0\\1&1&0\\1&0&0\\0&1&0\\0&0&1\end{bmatrix}$

$M_{64}^{(21)}$	$M_{64}^{(22)}$	$M_{64}^{(23)}$	$M_{65}^{(1)}$	$M_{66}^{(1)}$
$\begin{smallmatrix} K &&&&&& \\ \downarrow & \searrow &&&&& \\ K^4 && K^3 && K^4 && K \\ \downarrow & a\searrow & \downarrow b & \swarrow & \downarrow & \swarrow & \\ K^2 && K^5 && K^2 && \end{smallmatrix}$	$\begin{smallmatrix} K &&&&&& \\ \downarrow & \searrow &&&&& \\ K^4 && K^3 && K^4 && K \\ \downarrow & a\searrow & \downarrow b & \swarrow & \downarrow & \swarrow & \\ K^2 && K^5 && K^3 && \end{smallmatrix}$	$\begin{smallmatrix} K &&&&&& \\ \downarrow & \searrow &&&&& \\ K^4 && K^3 && K^4 && K^2 \\ \downarrow & a\searrow & \downarrow b & \swarrow & \downarrow & \swarrow & \\ K^2 && K^5 && K^3 && \end{smallmatrix}$	$\begin{smallmatrix} & K^2 & \leftarrow & K \\ \swarrow & \downarrow a && \downarrow \\ K & K^3 & K^2 & K^2 \\ && \searrow\downarrow & \nearrow\downarrow \\ && K^3 & K \end{smallmatrix}$	$\begin{smallmatrix} & K &&& \\ & \downarrow &&& \\ K & K^2 && K & K \\ \searrow & \downarrow & d\searrow & \downarrow & \searrow\downarrow \\ & K && K & K \end{smallmatrix}$
$\begin{smallmatrix}1\\3241\\252\end{smallmatrix}$	$\begin{smallmatrix}1\\3241\\253\end{smallmatrix}$	$\begin{smallmatrix}1\\3242\\253\end{smallmatrix}$	$\begin{smallmatrix}11\\1111\\31\end{smallmatrix}$	$\begin{smallmatrix}1\\1111\\111\end{smallmatrix}$
$a=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&0&0&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0&0\\1&1&0\\1&0&0\\0&1&0\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&0&0&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0&0\\1&1&0\\1&0&0\\0&1&0\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&0&0&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0&0\\0&1&0\\1&1&0\\0&1&0\\0&0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1\\0&1\\0&1\end{bmatrix}$	

$M_{66}^{(2)}$	$M_{66}^{(3)}$	$M_{66}^{(4)}$	$M_{66}^{(5)}$	$M_{66}^{(6)}$
$\begin{smallmatrix} && K &&&& \\ && \downarrow &&&& \\ K && K^2 && K && K \\ & \searrow & \downarrow & \searrow & \downarrow d & \searrow & \downarrow \\ && K && K^2 && K \end{smallmatrix}$	$\begin{smallmatrix} && K &&&& \\ && \downarrow &&&& \\ K && K^2 && K && K \\ & \searrow & \downarrow & d\searrow & \downarrow & \searrow & \downarrow \\ && K^2 && K && K \end{smallmatrix}$	$\begin{smallmatrix} && K &&&& \\ && \downarrow &&&& \\ K && K^2 && K^2 && K \\ & \searrow & \downarrow & \searrow & \downarrow & d\searrow & \downarrow \\ && K && K^2 && K \end{smallmatrix}$	$\begin{smallmatrix} && K &&&& \\ && \downarrow &&&& \\ K && K^2 && K && K \\ & \searrow & \downarrow & \searrow & \downarrow d & \searrow & \downarrow \\ && K^2 && K^2 && K \end{smallmatrix}$	$\begin{smallmatrix} && K &&&& \\ && \downarrow &&&& \\ K && K^2 && K^2 && K \\ & \searrow & \downarrow & \searrow & \downarrow & \searrow & \downarrow d \\ && K && K^2 && K^2 \end{smallmatrix}$
$\begin{smallmatrix}1\\1111\\121\end{smallmatrix}$	$\begin{smallmatrix}1\\1111\\211\end{smallmatrix}$	$\begin{smallmatrix}1\\1121\\121\end{smallmatrix}$	$\begin{smallmatrix}1\\1111\\221\end{smallmatrix}$	$\begin{smallmatrix}1\\1121\\122\end{smallmatrix}$

$M_{66}^{(7)}$	$M_{66}^{(8)}$	$M_{66}^{(9)}$	$M_{66}^{(10)}$	$M_{66}^{(11)}$
$\begin{smallmatrix} && K &&&& \\ && \downarrow &&&& \\ K && K^2 && K^2 && K \\ & \searrow & \downarrow & \searrow & \downarrow & d\searrow & \downarrow \\ && K^2 && K^2 && K \end{smallmatrix}$	$\begin{smallmatrix} && K &&&& \\ && \downarrow d &&&& \\ K && K^3 && K && K \\ & \searrow & \downarrow & \searrow & \downarrow & \searrow & \downarrow \\ && K^2 && K^2 && K \end{smallmatrix}$	$\begin{smallmatrix} && K^2 &&&& \\ && \downarrow a &&&& \\ K && K^3 && K && K \\ & \searrow & \downarrow & \searrow & \downarrow & \searrow & \downarrow \\ && K^2 && K^2 && K \end{smallmatrix}$	$\begin{smallmatrix} && K &&&& \\ && \downarrow &&&& \\ K && K^2 && K^2 && K \\ & \searrow & \downarrow & \searrow & \downarrow & \searrow & \downarrow d \\ && K^2 && K^2 && K^2 \end{smallmatrix}$	$\begin{smallmatrix} && K &&&& \\ && \downarrow d &&&& \\ K && K^3 && K^2 && K \\ & \searrow & \downarrow & \searrow & \downarrow & \searrow & \downarrow \\ && K^2 && K^2 && K \end{smallmatrix}$
$\begin{smallmatrix}1\\1121\\221\end{smallmatrix}$	$\begin{smallmatrix}1\\1211\\221\end{smallmatrix}$	$\begin{smallmatrix}2\\1111\\221\end{smallmatrix}$	$\begin{smallmatrix}1\\1121\\222\end{smallmatrix}$	$\begin{smallmatrix}1\\1221\\221\end{smallmatrix}$
		$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$		

$M_{66}^{(12)}$	$M_{66}^{(13)}$	$M_{66}^{(14)}$	$M_{66}^{(15)}$	$M_{66}^{(16)}$
$\begin{smallmatrix} && K^2 &&&& \\ && \downarrow a &&&& \\ K && K^3 && K^2 && K \\ & \searrow & \downarrow & \searrow & \downarrow & \searrow & \downarrow \\ && K^2 && K^2 && K \end{smallmatrix}$	$\begin{smallmatrix} && K &&&& \\ && \downarrow d &&&& \\ K && K^3 && K^2 && K \\ & \searrow & \downarrow & \searrow & \downarrow & \searrow & \downarrow \\ && K^2 && K^3 && K \end{smallmatrix}$	$\begin{smallmatrix} && K &&&& \\ && \downarrow d &&&& \\ K && K^3 && K^2 && K \\ & \searrow & \downarrow & \searrow & \downarrow & \searrow & \downarrow \\ && K^2 && K^2 && K^2 \end{smallmatrix}$	$\begin{smallmatrix} && K^2 &&&& \\ && \downarrow a &&&& \\ K && K^3 && K^2 && K \\ & \searrow & \downarrow & \searrow & \downarrow & \searrow & \downarrow \\ && K^2 && K^3 && K \end{smallmatrix}$	$\begin{smallmatrix} && K^2 &&&& \\ && \downarrow a &&&& \\ K && K^3 && K^2 && K \\ & \searrow & \downarrow & \searrow & \downarrow & \searrow & \downarrow \\ && K^2 && K^2 && K^2 \end{smallmatrix}$
$\begin{smallmatrix}2\\1121\\221\end{smallmatrix}$	$\begin{smallmatrix}1\\1221\\231\end{smallmatrix}$	$\begin{smallmatrix}1\\1221\\222\end{smallmatrix}$	$\begin{smallmatrix}2\\1121\\231\end{smallmatrix}$	$\begin{smallmatrix}2\\1121\\222\end{smallmatrix}$
$a=\begin{bmatrix}0&1\\1&0\\1&1\end{bmatrix}$			$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$

$M_{66}^{(17)}$	$M_{66}^{(18)}$	$M_{66}^{(19)}$	$M_{66}^{(20)}$	$M_{66}^{(21)}$
$\begin{smallmatrix} && K &&&& \\ && \downarrow d &&&& \\ K && K^3 && K^2 && K \\ & \searrow & \downarrow & \searrow & \downarrow & \searrow & \downarrow \\ && K^2 && K^3 && K^2 \end{smallmatrix}$	$\begin{smallmatrix} && K^2 &&&& \\ && \downarrow a &&&& \\ K && K^4 && K^2 && K \\ & \searrow & \downarrow b & \searrow & \downarrow & \searrow & \downarrow \\ && K^2 && K^3 && K \end{smallmatrix}$	$\begin{smallmatrix} && K^2 &&&& \\ && \downarrow a &&&& \\ K && K^3 && K^2 && K \\ & \searrow & \downarrow & \searrow & \downarrow & \searrow & \downarrow \\ && K^2 && K^3 && K^2 \end{smallmatrix}$	$\begin{smallmatrix} && K &&&& \\ && \downarrow d &&&& \\ K && K^3 && K^3 && K \\ & \searrow & \downarrow & \searrow & \downarrow & \searrow & \downarrow \\ && K^2 && K^3 && K^2 \end{smallmatrix}$	$\begin{smallmatrix} && K^2 &&&& \\ && \downarrow a &&&& \\ K && K^4 && K^2 && K \\ & d_2\searrow & \downarrow b & \searrow & \downarrow & \searrow & \downarrow \\ && K^3 && K^3 && K \end{smallmatrix}$
$\begin{smallmatrix}1\\1221\\232\end{smallmatrix}$	$\begin{smallmatrix}2\\1221\\231\end{smallmatrix}$	$\begin{smallmatrix}2\\1121\\232\end{smallmatrix}$	$\begin{smallmatrix}1\\1231\\232\end{smallmatrix}$	$\begin{smallmatrix}2\\1221\\331\end{smallmatrix}$
	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee 0\vee 0\vee d_2$	$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$		$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$

$M_{66}^{(22)}$	$M_{66}^{(23)}$	$M_{66}^{(24)}$	$M_{66}^{(25)}$	$M_{66}^{(26)}$
$\begin{smallmatrix} && K^2 &&&& \\ && \downarrow a &&&& \\ K && K^4 && K^2 && K \\ & \searrow & \downarrow b & \searrow & \downarrow & \searrow & \downarrow \\ && K^2 && K^3 && K^2 \end{smallmatrix}$	$\begin{smallmatrix} && K^2 &&&& \\ && \downarrow a &&&& \\ K && K^3 && K^3 && K \\ & \searrow & \downarrow & \searrow & \downarrow & \searrow & \downarrow \\ && K^2 && K^3 && K^2 \end{smallmatrix}$	$\begin{smallmatrix} && K^2 &&&& \\ && \downarrow a &&&& \\ K^2 && K^4 && K^2 && K \\ & \searrow & \downarrow b & \searrow & \downarrow & \searrow & \downarrow \\ && K^3 && K^3 && K \end{smallmatrix}$	$\begin{smallmatrix} && K^2 &&&& \\ && \downarrow a &&&& \\ K && K^4 && K^2 && K \\ & d_2\searrow & \downarrow b & \searrow & \downarrow & \searrow & \downarrow \\ && K^3 && K^3 && K^2 \end{smallmatrix}$	$\begin{smallmatrix} && K^2 &&&& \\ && \downarrow a &&&& \\ K && K^4 && K^3 && K \\ & \searrow & \downarrow b & \searrow & \downarrow & \searrow & \downarrow \\ && K^2 && K^3 && K^2 \end{smallmatrix}$
$\begin{smallmatrix}2\\1221\\232\end{smallmatrix}$	$\begin{smallmatrix}2\\1131\\232\end{smallmatrix}$	$\begin{smallmatrix}2\\2221\\331\end{smallmatrix}$	$\begin{smallmatrix}2\\1221\\332\end{smallmatrix}$	$\begin{smallmatrix}2\\1231\\232\end{smallmatrix}$
$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee 0\vee 0\vee d_2$	$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee 0\vee 0\vee d_2$

$M_{66}^{(27)}$	$M_{66}^{(28)}$	$M_{66}^{(29)}$	$M_{66}^{(30)}$	$M_{66}^{(31)}$
$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K^2 & K^4 & K^2 & K \\ \searrow & \downarrow b & \searrow\downarrow & \searrow\downarrow \\ & K^3 & K^3 & K^2 \end{array}$	$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K & K^4 & K^3 & K \\ d_2\searrow & \downarrow b & \searrow\downarrow & \circ\!\searrow\downarrow \\ & K^3 & K^3 & K^2 \end{array}$	$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K & K^4 & K^3 & K \\ \searrow & \downarrow b & \searrow\downarrow c & \searrow\downarrow \\ & K^2 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K^2 & K^4 & K^3 & K \\ \searrow & \downarrow b & \searrow\downarrow & \circ\!\searrow\downarrow \\ & K^3 & K^3 & K^2 \end{array}$	$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K & K^4 & K^3 & K \\ d_2\searrow & \downarrow b & \searrow\downarrow c & \searrow\downarrow \\ & K^3 & K^4 & K^2 \end{array}$
$\begin{smallmatrix} & 2 & & \\ 2 & 2 & 2 & 1 \\ & 3 & 3 & 2 \end{smallmatrix}$	$\begin{smallmatrix} & 2 & & \\ 1 & 2 & 3 & 1 \\ & 3 & 3 & 2 \end{smallmatrix}$	$\begin{smallmatrix} & 2 & & \\ 1 & 2 & 3 & 1 \\ & 2 & 4 & 2 \end{smallmatrix}$	$\begin{smallmatrix} & 2 & & \\ 2 & 2 & 3 & 1 \\ & 3 & 3 & 2 \end{smallmatrix}$	$\begin{smallmatrix} & 2 & & \\ 1 & 2 & 3 & 1 \\ & 3 & 4 & 2 \end{smallmatrix}$
$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee 0\vee 0\vee d_2$ $c=d_1\vee d_2\vee d_4$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$ $c=d_1\vee d_2\vee d_4$

$M_{66}^{(32)}$	$M_{66}^{(33)}$	$M_{66}^{(34)}$	$M_{66}^{(35)}$	$M_{66}^{(36)}$
$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K^2 & K^4 & K^3 & K \\ \searrow & \downarrow b & \searrow\downarrow c & \searrow\downarrow \\ & K^3 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K & K^5 & K^3 & K \\ d_2\searrow & \downarrow b & \searrow\downarrow & \circ\!\searrow\downarrow \\ & K^3 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} & K^3 & & \\ & \downarrow a & & \\ K & K^5 & K^3 & K \\ d_2\searrow & \downarrow b & \searrow\downarrow & \circ\!\searrow\downarrow \\ & K^3 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K^2 & K^5 & K^3 & K \\ \searrow & \downarrow b & \searrow\downarrow & \circ\!\searrow\downarrow \\ & K^3 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} & K^3 & & \\ & \downarrow a & & \\ K^2 & K^5 & K^3 & K \\ \searrow & \downarrow b & \searrow\downarrow & \circ\!\searrow\downarrow \\ & K^3 & K^4 & K^2 \end{array}$
$\begin{smallmatrix} & 2 & & \\ 2 & 2 & 3 & 1 \\ & 3 & 4 & 2 \end{smallmatrix}$	$\begin{smallmatrix} & 2 & & \\ 1 & 3 & 3 & 1 \\ & 3 & 4 & 2 \end{smallmatrix}$	$\begin{smallmatrix} & 3 & & \\ 1 & 2 & 3 & 1 \\ & 3 & 4 & 2 \end{smallmatrix}$	$\begin{smallmatrix} & 2 & & \\ 2 & 3 & 3 & 1 \\ & 3 & 4 & 2 \end{smallmatrix}$	$\begin{smallmatrix} & 3 & & \\ 2 & 2 & 3 & 1 \\ & 3 & 4 & 2 \end{smallmatrix}$
$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee d_3$ $c=d_1\vee d_2\vee d_4$	$a=\begin{bmatrix}1&0\\1&1\\1&0\\0&1\\0&1\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$	$a=\begin{bmatrix}1&0&0\\0&1&1\\1&1&1\\1&1&0\\1&0&1\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$	$a=\begin{bmatrix}1&1\\1&0\\1&1\\0&1\\1&1\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$	$a=\begin{bmatrix}0&1&1\\0&1&0\\1&1&1\\1&0&0\\1&0&1\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3$

$M_{66}^{(37)}$	$M_{66}^{(38)}$	$M_{66}^{(39)}$	$M_{66}^{(40)}$	$M_{66}^{(41)}$
$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K^2 & K^5 & K^3 & K \\ b\searrow & \downarrow c & \searrow\downarrow & \circ\!\searrow\downarrow \\ & K^4 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} & K^3 & & \\ & \downarrow a & & \\ K^2 & K^5 & K^3 & K \\ b\searrow & \downarrow c & \searrow\downarrow & \circ\!\searrow\downarrow \\ & K^4 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} & K^3 & & \\ & \downarrow a & & \\ K^2 & K^6 & K^3 & K \\ \searrow & \downarrow b & \searrow\downarrow & \circ\!\searrow\downarrow \\ & K^4 & K^4 & K^2 \end{array}$	$\begin{array}{cccc} & K^3 & & \\ & \downarrow a & & \\ K^2 & K^6 & K^3 & K \\ b\searrow & \downarrow c & \searrow\downarrow & \circ\!\searrow\downarrow \\ & K^4 & K^5 & K^2 \end{array}$	$\begin{array}{cccc} & K^3 & & \\ & \downarrow a & & \\ K^2 & K^6 & K^4 & K \\ b\searrow & \downarrow c & \searrow\downarrow & \circ\!\searrow\downarrow \\ & K^4 & K^5 & K^2 \end{array}$
$\begin{smallmatrix} & 2 & & \\ 2 & 3 & 3 & 1 \\ & 4 & 4 & 2 \end{smallmatrix}$	$\begin{smallmatrix} & 3 & & \\ 2 & 2 & 3 & 1 \\ & 4 & 4 & 2 \end{smallmatrix}$	$\begin{smallmatrix} & 3 & & \\ 2 & 3 & 3 & 1 \\ & 4 & 4 & 2 \end{smallmatrix}$	$\begin{smallmatrix} & 3 & & \\ 2 & 3 & 3 & 1 \\ & 4 & 5 & 2 \end{smallmatrix}$	$\begin{smallmatrix} & 3 & & \\ 2 & 3 & 4 & 1 \\ & 4 & 5 & 2 \end{smallmatrix}$
$a=\begin{bmatrix}1&0\\1&0\\1&1\\0&1\\0&1\end{bmatrix}$ $b=d_2\vee d_3$ $c=d_1\vee d_2\vee d_3\vee 0\vee d_4$	$a=\begin{bmatrix}1&0&0\\1&1&1\\0&1&0\\0&1&1\\1&0&1\end{bmatrix}$ $b=d_2\vee d_3$ $c=d_1\vee d_2\vee d_3\vee 0\vee d_4$	$a=\begin{bmatrix}1&0&0\\1&1&0\\0&1&0\\1&1&1\\0&0&1\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee 0\vee 0\vee d_3\vee d_4$	$a=\begin{bmatrix}1&1&0\\0&1&1\\0&1&0\\1&1&1\\1&0&0\\1&1&1\end{bmatrix}$ $b=d_2\vee d_3$ $c=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$	$a=\begin{bmatrix}1&1&0\\1&0&0\\1&1&1\\0&1&1\\0&1&0\\0&1&1\end{bmatrix}$ $b=d_2\vee d_3$ $c=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$

$M_{66}^{(42)}$	$M_{66}^{(43)}$	$M_{67}^{(1)}$	$M_{67}^{(2)}$	$M_{67}^{(3)}$
$\begin{array}{cccc} & K^3 & & \\ & \downarrow a & & \\ K^2 & K^6 & K^4 & K \\ b\searrow & \downarrow c & \searrow\downarrow & \circ\!\searrow\downarrow \\ & K^4 & K^5 & K^3 \end{array}$	$\begin{array}{cccc} & K^3 & & \\ & \downarrow a & & \\ K^2 & K^6 & K^4 & K^2 \\ b\searrow & \downarrow c & \searrow\downarrow & \circ\!\searrow\downarrow \\ & K^4 & K^5 & K^3 \end{array}$	$\begin{array}{cccc} & & K & \\ & & \swarrow\downarrow & \\ K & K^2 & K^2 & K \\ d\searrow & \downarrow & \swarrow\downarrow & \swarrow\downarrow \\ & K^2 & K & K \end{array}$	$\begin{array}{cccc} & & K & \\ & & \swarrow\downarrow & \\ K & K^2 & K^2 & K \\ d\searrow & \downarrow & \swarrow\downarrow & \swarrow\!\circ\downarrow \\ & K^2 & K^2 & K \end{array}$	$\begin{array}{cccc} & & K & \\ & & \swarrow\downarrow & \\ K & K^2 & K^2 & K^2 \\ d\searrow & \downarrow & \swarrow\downarrow & \swarrow\downarrow \\ & K^2 & K^2 & K \end{array}$
$\begin{smallmatrix} & 3 & & \\ 2 & 3 & 4 & 1 \\ & 4 & 5 & 3 \end{smallmatrix}$	$\begin{smallmatrix} & 3 & & \\ 2 & 3 & 4 & 2 \\ & 4 & 5 & 3 \end{smallmatrix}$	$\begin{smallmatrix} & & 1 & \\ 1 & 1 & 1 & 1 \\ & 2 & 1 & 1 \end{smallmatrix}$	$\begin{smallmatrix} & & 1 & \\ 1 & 1 & 1 & 1 \\ & 2 & 2 & 1 \end{smallmatrix}$	$\begin{smallmatrix} & & 1 & \\ 1 & 1 & 1 & 2 \\ & 2 & 2 & 1 \end{smallmatrix}$
$a=\begin{bmatrix}1&1&0\\1&0&0\\1&1&1\\0&1&1\\0&1&0\\0&1&1\end{bmatrix}$ $b=d_2\vee d_3$ $c=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$	$a=\begin{bmatrix}1&1&0\\1&0&0\\1&0&1\\0&1&1\\0&1&0\\0&1&1\end{bmatrix}$ $b=d_2\vee d_3$ $c=d_1\vee d_2\vee d_3\vee 0\vee 0\vee d_4$			

$M_{67}^{(4)}$	$M_{67}^{(5)}$	$M_{67}^{(6)}$	$M_{67}^{(7)}$	$M_{67}^{(8)}$
$\begin{array}{ccccc} & & & K & \\ & & \swarrow & \downarrow & \\ K & K^2 & & K^3 & K \\ d\searrow & \downarrow & \swarrow a & \downarrow & \swarrow\!\circ\downarrow \\ & K^2 & & K^2 & K \end{array}$	$\begin{array}{ccccc} & & & K & \\ & & \swarrow d & \downarrow d & \\ K & K^2 & & K^3 & K^2 \\ \searrow & \downarrow & \swarrow\!\circ & \downarrow & \swarrow\downarrow \\ & K^2 & & K^2 & K \end{array}$	$\begin{array}{cccc} & & K & \\ & & \swarrow\downarrow & \\ K & K^2 & K^3 & K \\ d\searrow & \downarrow & \swarrow\downarrow & \swarrow\!\circ\downarrow \\ & K^3 & K^2 & K \end{array}$	$\begin{array}{ccccc} & & & K & \\ & & \swarrow\!\circ & \circ\!\downarrow & \\ K & K^2 & & K^3 & K^2 \\ d\searrow & \downarrow & \swarrow a & \downarrow & \swarrow\ \circ\!\downarrow \\ & K^2 & & K^3 & K \end{array}$	$\begin{array}{cccc} & & K & \\ & & \swarrow\downarrow & \\ K & K^2 & K^3 & K^2 \\ d\searrow & \downarrow & \swarrow\downarrow & \swarrow\downarrow \\ & K^3 & K^2 & K \end{array}$
$\begin{smallmatrix} & 1 & & \\ 1 & 1 & 2 & 1 \\ & 2 & 2 & 1 \end{smallmatrix}$	$\begin{smallmatrix} & 1 & & \\ 1 & 1 & 2 & 2 \\ & 2 & 2 & 1 \end{smallmatrix}$	$\begin{smallmatrix} & 1 & & \\ 1 & 1 & 2 & 1 \\ & 3 & 2 & 1 \end{smallmatrix}$	$\begin{smallmatrix} & 1 & & \\ 1 & 1 & 2 & 2 \\ & 2 & 3 & 1 \end{smallmatrix}$	$\begin{smallmatrix} & 1 & & \\ 1 & 1 & 2 & 2 \\ & 3 & 2 & 1 \end{smallmatrix}$
$a=\begin{bmatrix}1&1&0\\0&0&1\end{bmatrix}$			$a=\begin{bmatrix}1&0&0\\0&1&1\end{bmatrix}$	

$M_{67}^{(9)}$	$M_{67}^{(10)}$	$M_{67}^{(11)}$	$M_{67}^{(12)}$	$M_{67}^{(13)}$
K $\swarrow\downarrow$ $K^2\ \ K^2\ \ K^3\ \ K$ $a\searrow\downarrow\ \swarrow\downarrow\ \swarrow\downarrow$ $K^3\ \ K^2\ \ K$	K $\swarrow\ \downarrow$ $K\ \ K^2\ \ K^3\ \ K^2$ $d\searrow\downarrow\ \swarrow\downarrow\ \swarrow\downarrow$ $K^3\ \ K^3\ \ K$	K $\swarrow\downarrow$ $K^2\ \ K^2\ \ K^3\ \ K^2$ $a\searrow\downarrow\ \swarrow\downarrow\ \swarrow\downarrow$ $K^3\ \ K^2\ \ K$	K^2 $\swarrow a\ \downarrow b$ $K\ \ K^3\ \ K^4\ \ K^2$ $d_2\searrow\downarrow\ \swarrow c\ \downarrow\ \swarrow\downarrow$ $K^3\ \ K^3\ \ K$	K $\swarrow\downarrow$ $K\ \ K^2\ \ K^4\ \ K^2$ $d\searrow\downarrow\ \swarrow a\ \downarrow\ \swarrow\downarrow$ $K^3\ \ K^3\ \ K$
1 2121 321	1 1122 331	1 2122 321	2 1122 331	1 1132 331
$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$		$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$	$a=\begin{bmatrix}1&1\\1&0\\1&0\end{bmatrix}$ $b=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $c=d_1\vee d_2\vee 0\vee d_3$	$b=d_1\vee d_1\vee d_2\vee d_3$

$M_{67}^{(14)}$	$M_{67}^{(15)}$	$M_{67}^{(16)}$	$M_{67}^{(17)}$	$M_{67}^{(18)}$
K $\swarrow\downarrow$ $K^2\ \ K^2\ \ K^3\ \ K^2$ $a\searrow\downarrow\ \swarrow\downarrow\ \swarrow\downarrow$ $K^3\ \ K^3\ \ K$	K^2 $\swarrow a\ \downarrow b$ $K^2\ \ K^3\ \ K^4\ \ K^2$ $\searrow\downarrow\ \swarrow c\ \downarrow\ \swarrow\downarrow$ $K^3\ \ K^3\ \ K$	K $\swarrow\ \downarrow$ $K^2\ \ K^2\ \ K^4\ \ K^2$ $a\searrow\downarrow\ \swarrow b\ \downarrow\ \swarrow\downarrow$ $K^3\ \ K^3\ \ K$	K^2 $\swarrow a\ \downarrow b$ $K^2\ \ K^3\ \ K^4\ \ K^2$ $c\searrow\downarrow e\ \swarrow\ \downarrow f\ \swarrow\downarrow$ $K^4\ \ K^3\ \ K$	K $\swarrow\ \downarrow$ $K^2\ \ K^2\ \ K^4\ \ K^2$ $a\searrow\downarrow b\ \swarrow c\ \downarrow\ \swarrow\downarrow$ $K^4\ \ K^3\ \ K$
1 2122 331	2 2122 331	1 2132 331	2 2132 431	1 2132 431
$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$	$a=\begin{bmatrix}0&1\\1&1\\1&0\end{bmatrix}$ $b=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $c=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$ $b=d_1\vee d_1\vee d_2\vee d_3$	$a=d_1\vee d_3$ $b=d_1\vee d_4$ $c=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $e=d_1\vee d_2\vee d_4$ $f=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_4$ $c=d_4\vee d_1\vee d_2\vee d_3$

$M_{67}^{(19)}$	$M_{67}^{(20)}$	$M_{67}^{(21)}$	$M_{67}^{(22)}$	$M_{67}^{(23)}$
K^2 $\swarrow a\ \downarrow$ $K^2\ \ K^3\ \ K^5\ \ K^2$ $b\searrow\downarrow c\ \swarrow e\ \downarrow\ \swarrow\downarrow$ $K^4\ \ K^3\ \ K$	K $\swarrow\ \downarrow$ $K^2\ \ K^3\ \ K^4\ \ K^2$ $a\searrow\downarrow b\ \swarrow c\ \downarrow\ \swarrow\downarrow$ $K^4\ \ K^3\ \ K$	K^2 $\swarrow a\ \downarrow$ $K^2\ \ K^3\ \ K^5\ \ K^2$ $b\searrow\downarrow c\ \swarrow e\ \downarrow\ \swarrow\downarrow$ $K^4\ \ K^4\ \ K$	K^2 $\swarrow a\ \downarrow$ $K^2\ \ K^3\ \ K^5\ \ K^3$ $b\searrow\downarrow c\ \swarrow e\ \downarrow\ \swarrow\downarrow$ $K^4\ \ K^4\ \ K$	K^2 $\swarrow a\ \downarrow$ $K^2\ \ K^3\ \ K^5\ \ K^3$ $b\searrow\downarrow c\ \swarrow e\ \downarrow\ \swarrow\downarrow$ $K^4\ \ K^4\ \ K^2$
2 2132 431	1 2232 431	2 2132 441	2 2133 441	2 2133 442
$a=d_1\vee d_3$ $b=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $c=d_1\vee d_2\vee d_4$ $e=d_1\vee d_4\vee d_1\vee d_2\vee d_3$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_4$ $c=d_4\vee d_1\vee d_2\vee d_3$	$a=d_1\vee d_3$ $b=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $c=d_1\vee d_2\vee d_4$ $e=d_1\vee d_4\vee d_1\vee d_2\vee d_3$	$a=d_1\vee d_3$ $b=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $c=d_1\vee d_2\vee d_4$ $e=d_1\vee d_4\vee d_1\vee d_2\vee d_3$	$a=d_1\vee d_3$ $b=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $c=d_1\vee d_2\vee d_4$ $e=d_1\vee d_4\vee d_1\vee d_2\vee d_3$

$M_{68}^{(1)}$	$M_{69}^{(1)}$	$M_{69}^{(2)}$	$M_{69}^{(3)}$	$M_{69}^{(4)}$
$K\ \ \ \ K$ $\downarrow\ \ \ \ \downarrow$ $K^2\ \ K^2\ \ K^2$ $d\downarrow\ \searrow\downarrow\ \searrow\downarrow$ $K\ \ K^2\ \ K^2$	$K\ \ K\ \ K\ \ K\ \ K$ $\searrow\downarrow\swarrow\downarrow\swarrow\downarrow\swarrow$ $K\ \ K\ \ K$	$K\ \ K\ \ K\ \ K\ \ K$ $\searrow\downarrow d\ \swarrow\downarrow\ \swarrow\downarrow\ \swarrow$ $K^2\ \ K\ \ K$	$K\ \ K\ \ K^2\ \ K\ \ K$ $\searrow\downarrow d\ \swarrow\downarrow\ \swarrow\downarrow\ \swarrow$ $K^2\ \ K\ \ K$	$K\ \ K\ \ K^2\ \ K\ \ K$ $\searrow\downarrow d\ \swarrow\downarrow\ \swarrow\downarrow\ \swarrow$ $K^2\ \ K^2\ \ K$
1 1 121 122	11111 111	11111 211	11211 211	11211 221

$M_{69}^{(5)}$	$M_{69}^{(6)}$	$M_{70}^{(1)}$	$M_{70}^{(2)}$	$M_{70}^{(3)}$
$K\ \ K\ \ K^2\ \ K^2\ \ K$ $\searrow\downarrow d\ \swarrow\downarrow\ \swarrow\downarrow\ \swarrow$ $K^2\ \ K^2\ \ K$	$K\ \ K\ \ K^2\ \ K^2\ \ K$ $\searrow\downarrow d\ \swarrow\downarrow\ \swarrow\downarrow\ \swarrow$ $K^2\ \ K^2\ \ K^2$	K $\downarrow$ $K^2\ \ K^2\ \ K\ \ K$ $\searrow\downarrow\ \searrow\downarrow d\ \swarrow\downarrow$ $K^2\ \ K^2\ \ K$	K $\downarrow$ $K^2\ \ K^2\ \ K\ \ K^2$ $\searrow\downarrow\ \searrow\downarrow d\ \swarrow\downarrow$ $K^2\ \ K^2\ \ K$	K $\downarrow$ $K^2\ \ K^2\ \ K\ \ K^2$ $\searrow\downarrow\ \searrow\downarrow d\ \swarrow\downarrow$ $K^2\ \ K^3\ \ K$
11221 221	11221 222	1 1211 221	1 1212 221	1 1212 231

$M_{70}^{(4)}$	$M_{70}^{(5)}$	$M_{70}^{(6)}$	$M_{70}^{(7)}$	$M_{70}^{(8)}$
$\begin{array}{llll} K \\ \downarrow \\ K^2 & K^2 & K^2 & K^2 \\ & \searrow\downarrow & \searrow\downarrow a & \swarrow\overset{\circ}{\downarrow} \\ & K^2 & K^3 & K \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^3 & K & K^2 \\ & \searrow\downarrow & \searrow\downarrow d & \swarrow\overset{\circ}{\downarrow} \\ & K^2 & K^3 & K \end{array}$	$\begin{array}{llll} K \\ \downarrow \\ K^2 & K^3 & K^2 & K^2 \\ & \searrow\downarrow & \searrow\downarrow a & \swarrow\overset{\circ}{\downarrow} \\ & K^2 & K^3 & K \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^3 & K & K^2 \\ & {}^{\circ}\searrow\downarrow & \searrow\downarrow d & \swarrow\overset{\circ}{\downarrow} \\ & K^3 & K^3 & K \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^3 & K^2 & K^2 \\ & \searrow\downarrow & \searrow\downarrow a \swarrow b & \downarrow \\ & K^2 & K^4 & K \end{array}$
1 1222 231	1 1312 231	1 1322 231	1 1312 331	1 1322 241
$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$		$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$		$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $a=d_1\vee d_4$

$M_{70}^{(9)}$	$M_{70}^{(10)}$	$M_{70}^{(11)}$	$M_{70}^{(12)}$	$M_{70}^{(13)}$
$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^3 & K^2 & K^2 \\ & {}^{\circ}\searrow\downarrow & \searrow\downarrow a & \swarrow\overset{\circ}{\downarrow} \\ & K^3 & K^3 & K \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^3 & K^2 & K^3 \\ & \searrow\downarrow & \searrow\downarrow a \swarrow b & \downarrow c \\ & K^2 & K^4 & K \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^3 & K^2 & K^2 \\ & {}^{\circ}\searrow\downarrow & \searrow\downarrow a \swarrow b & \downarrow \\ & K^3 & K^4 & K \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^3 & K^2 & K^3 \\ & \searrow\downarrow & \searrow\downarrow a \swarrow b & \downarrow \\ & K^2 & K^4 & K^2 \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^3 & K^2 & K^3 \\ & {}^{\circ}\searrow\downarrow & \searrow\downarrow a \swarrow b & \downarrow c \\ & K^3 & K^4 & K \end{array}$
1 1322 331	1 1323 241	1 1322 341	1 1323 242	1 1323 341
$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_4$ $c=[\,0\ 1\ 0\,]$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_4$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_4$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_4$ $c=[\,0\ 1\ 0\,]$

$M_{70}^{(14)}$	$M_{70}^{(15)}$	$M_{70}^{(16)}$	$M_{70}^{(17)}$	$M_{70}^{(18)}$
$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^4 & K^2 & K^2 \\ & \searrow\downarrow a & \searrow\downarrow b \swarrow c & \downarrow \\ & K^3 & K^4 & K \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^3 & K^2 & K^3 \\ & {}^{\circ}\searrow\downarrow & \searrow\downarrow a \swarrow b & \downarrow \\ & K^3 & K^4 & K^2 \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^4 & K^2 & K^3 \\ & \searrow\downarrow a & \searrow\downarrow b \swarrow c & \downarrow e \\ & K^3 & K^4 & K \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^4 & K^2 & K^3 \\ & \searrow\downarrow a & \searrow\downarrow b \swarrow c & \downarrow \\ & K^3 & K^4 & K^2 \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^4 & K^2 & K^3 \\ & {}^{\circ}\searrow\downarrow & \searrow\downarrow a \swarrow b & \downarrow c \\ & K^3 & K^5 & K \end{array}$
1 1422 341	1 1323 342	1 1423 341	1 1423 342	1 1423 351
$a=d_1\vee d_2\vee 0\vee d_3$ $b=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $c=d_1\vee d_4$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_4$	$a=d_1\vee d_2\vee 0\vee d_3$ $b=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $c=d_1\vee d_2\vee d_4$ $e=[\,0\ 1\ 0\,]$	$a=d_1\vee d_2\vee 0\vee d_3$ $b=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $c=d_1\vee d_2\vee d_4$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_5$ $c=[\,0\ 1\ 0\,]$

$M_{70}^{(19)}$	$M_{70}^{(20)}$	$M_{70}^{(21)}$	$M_{70}^{(22)}$	$M_{70}^{(23)}$
$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^4 & K^2 & K^3 \\ & {}^{\circ}\searrow\downarrow & \searrow\downarrow a \swarrow b & \downarrow \\ & K^3 & K^5 & K^2 \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^4 & K^3 & K^3 \\ & {}^{\circ}\searrow\downarrow & \searrow\downarrow a \swarrow b & \downarrow c \\ & K^3 & K^5 & K \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^4 & K^2 & K^4 \\ & {}^{\circ}\searrow\downarrow & \searrow\downarrow a \swarrow b & \downarrow c \\ & K^3 & K^5 & K^2 \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^4 & K^3 & K^3 \\ & {}^{\circ}\searrow\downarrow & \searrow\downarrow a \swarrow b & \downarrow \\ & K^3 & K^5 & K^2 \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^4 & K^3 & K^4 \\ & {}^{\circ}\searrow\downarrow & \searrow\downarrow a \swarrow b & \downarrow c \\ & K^3 & K^5 & K^2 \end{array}$
1 1423 352	1 1433 351	1 1424 352	1 1433 352	1 1434 352
$a=\begin{bmatrix}0&1\\1&0\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_5$	$a=\begin{bmatrix}0&1&0\\0&0&1\\0&1&1\\1&0&1\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_5$ $c=[\,0\ 1\ 0\,]$	$a=\begin{bmatrix}0&1\\1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_5$ $c=0\vee d_1\vee d_2\vee 0$	$a=\begin{bmatrix}1&0&1\\0&1&1\\0&1&0\\0&1&1\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_5$	$a=\begin{bmatrix}0&1&0\\0&1&1\\0&0&1\\1&0&1\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_5$ $c=0\vee d_1\vee d_2\vee 0$

$M_{70}^{(24)}$	$M_{70}^{(25)}$	$M_{70}^{(26)}$	$M_{70}^{(27)}$	$M_{70}^{(28)}$
$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^4 & K^3 & K^4 \\ & {}^{\circ}\searrow\downarrow & \searrow\downarrow a \swarrow b & \downarrow \\ & K^3 & K^6 & K^2 \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^5 & K^3 & K^4 \\ & {}^{\circ}\searrow\downarrow & \searrow\downarrow a \swarrow b & \downarrow c \\ & K^3 & K^6 & K^2 \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^2 & K^5 & K^3 & K^4 \\ & {}^{\circ}\searrow\downarrow & \searrow\downarrow a \swarrow b & \downarrow c \\ & K^4 & K^6 & K^2 \end{array}$	$\begin{array}{llll} K \\ \overset{\circ}{\downarrow} \\ K^3 & K^5 & K^3 & K^4 \\ & {}^{\circ}\searrow\downarrow & \searrow\downarrow a \swarrow b & \downarrow c \\ & K^4 & K^6 & K^2 \end{array}$	$\begin{array}{llll} K^2 \\ \overset{\circ}{\downarrow} \\ K^3 & K^5 & K^3 & K^4 \\ & {}^{\circ}\searrow\downarrow & \searrow\downarrow a \swarrow b & \downarrow c \\ & K^4 & K^6 & K^2 \end{array}$
1 1434 362	1 1534 362	1 1534 462	1 2534 462	2 1534 462
$a=\begin{bmatrix}1&0&1\\0&1&1\\0&0&1\\0&1&0\\0&1&0\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_5\vee d_6$	$a=\begin{bmatrix}0&1&1\\0&0&1\\0&1&0\\1&0&1\\0&1&0\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_6$ $c=0\vee d_1\vee d_2\vee 0$	$a=\begin{bmatrix}0&1&0\\0&1&1\\0&0&1\\1&0&1\\0&1&0\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_6$ $c=0\vee d_1\vee d_2\vee 0$	$a=\begin{bmatrix}0&1&1\\0&0&1\\0&1&0\\1&1&0\\0&0&1\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_6$ $c=0\vee d_1\vee d_2\vee 0$	$a=\begin{bmatrix}0&1&0\\0&1&1\\0&0&1\\1&0&1\\0&1&0\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_6$ $c=0\vee d_1\vee d_2\vee 0$

$M_{71}^{(1)}$	$M_{72}^{(1)}$	$M_{72}^{(2)}$	$M_{72}^{(3)}$	$M_{72}^{(4)}$
$\begin{smallmatrix} & & K & & \\ & \swarrow d & \downarrow & \searrow & \\ K^2 & & K^3 & K^2 & K^2 \\ & \searrow & \downarrow a & \searrow\downarrow & \swarrow\downarrow \\ & & K^2 & K^3 & K \end{smallmatrix}$	$\begin{smallmatrix} K & & K & & \\ \downarrow & \swarrow & \downarrow & & \\ K & & K^2 & K & K \\ & & & \searrow\downarrow d & \swarrow\downarrow \\ & & & K^2 & K \end{smallmatrix}$	$\begin{smallmatrix} K & & K & & \\ \downarrow & \swarrow & \downarrow & & \\ K & & K^2 & K & K^2 \\ & & & \searrow\downarrow d & \swarrow\downarrow \\ & & & K^2 & K \end{smallmatrix}$	$\begin{smallmatrix} K & & K & & \\ \downarrow & \swarrow & \downarrow & & \\ K & & K^2 & K & K^2 \\ & & & \searrow\downarrow d & \swarrow\downarrow \\ & & & K^3 & K \end{smallmatrix}$	$\begin{smallmatrix} K & & K^2 & & \\ \downarrow & \swarrow & \hookdownarrow & & \\ K & & K^3 & K & K^2 \\ & & & \searrow\downarrow d & \swarrow \hookdownarrow \\ & & & K^3 & K \end{smallmatrix}$
1 1212 231	11 1111 21	11 1112 21	11 1112 31	12 1112 31
$a=\begin{bmatrix} 1 & 1 & 0 \\ 1 & 0 & 1 \end{bmatrix}$				

$M_{72}^{(5)}$	$M_{72}^{(6)}$	$M_{72}^{(7)}$	$M_{72}^{(8)}$	$M_{72}^{(9)}$
$\begin{smallmatrix} K & & K & & \\ \downarrow & \swarrow & \downarrow & & \\ K & & K^2 & K^2 & K^2 \\ & & & \searrow\downarrow a & \swarrow\downarrow \\ & & & K^3 & K \end{smallmatrix}$	$\begin{smallmatrix} K & & K^2 & & \\ \hookdownarrow & \swarrow & \hookdownarrow & & \\ K^2 & & K^3 & K & K^2 \\ & & & \searrow\downarrow d & \swarrow \hookdownarrow \\ & & & K^3 & K \end{smallmatrix}$	$\begin{smallmatrix} K & & K^2 & & \\ \downarrow & \swarrow & \hookdownarrow & & \\ K & & K^3 & K^2 & K^2 \\ & & & \searrow\downarrow a & \swarrow \hookdownarrow \\ & & & K^3 & K \end{smallmatrix}$	$\begin{smallmatrix} K & & K^2 & & \\ \hookdownarrow & \swarrow & \hookdownarrow & & \\ K^2 & & K^3 & K^2 & K^2 \\ & & & \searrow\downarrow a & \swarrow \hookdownarrow \\ & & & K^3 & K \end{smallmatrix}$	$\begin{smallmatrix} K & & K^2 & & \\ \downarrow & \swarrow & \hookdownarrow & & \\ K & & K^3 & K^2 & K^2 \\ & & & \searrow\downarrow a \ \swarrow b & \downarrow \\ & & & K^4 & K \end{smallmatrix}$
11 1122 31	12 2112 31	12 1122 31	12 2122 31	12 1122 41
$a=\begin{bmatrix} 1 & 1 \\ 1 & 0 \\ 0 & 1 \end{bmatrix}$		$a=\begin{bmatrix} 1 & 1 \\ 1 & 0 \\ 0 & 1 \end{bmatrix}$	$a=\begin{bmatrix} 1 & 1 \\ 1 & 0 \\ 0 & 1 \end{bmatrix}$	$a=\begin{bmatrix} 0 & 1 \\ 1 & 1 \\ 0 & 1 \\ 1 & 0 \end{bmatrix}$ $b=d_1\vee d_4$

$M_{72}^{(10)}$	$M_{72}^{(11)}$	$M_{72}^{(12)}$	$M_{72}^{(13)}$	$M_{72}^{(14)}$
$\begin{smallmatrix} K & & K^2 & & \\ \hookdownarrow & \swarrow & \hookdownarrow & & \\ K^2 & & K^3 & K^2 & K^2 \\ & & & \searrow\downarrow a \ \swarrow b & \downarrow \\ & & & K^4 & K \end{smallmatrix}$	$\begin{smallmatrix} K & & K^2 & & \\ \downarrow & \swarrow & \hookdownarrow & & \\ K & & K^3 & K^2 & K^3 \\ & & & \searrow\downarrow a \ \swarrow b & \downarrow c \\ & & & K^4 & K \end{smallmatrix}$	$\begin{smallmatrix} K & & K^3 & & \\ \hookdownarrow & \swarrow & \downarrow & & \\ K^2 & & K^4 & K^2 & K^2 \\ & & & \searrow\downarrow a \ \swarrow b & \downarrow \\ & & & K^4 & K \end{smallmatrix}$	$\begin{smallmatrix} K & & K^2 & & \\ \hookdownarrow & \swarrow & \hookdownarrow & & \\ K^2 & & K^3 & K^2 & K^3 \\ & & & \searrow\downarrow a \ \swarrow b & \downarrow c \\ & & & K^4 & K \end{smallmatrix}$	$\begin{smallmatrix} K & & K^2 & & \\ \downarrow & \swarrow & \hookdownarrow & & \\ K & & K^3 & K^2 & K^3 \\ & & & \searrow\downarrow a \ \swarrow b & \downarrow \\ & & & K^4 & K^2 \end{smallmatrix}$
12 2122 41	12 1123 41	13 2122 41	12 2123 41	12 1123 42
$a=\begin{bmatrix} 0 & 1 \\ 1 & 1 \\ 0 & 1 \\ 1 & 0 \end{bmatrix}$ $b=d_1\vee d_4$	$a=\begin{bmatrix} 0 & 1 \\ 1 & 1 \\ 0 & 1 \\ 1 & 0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_4$ $c=[\,0\ 1\ 0\,]$	$a=\begin{bmatrix} 0 & 1 \\ 1 & 1 \\ 0 & 1 \\ 1 & 0 \end{bmatrix}$ $b=d_1\vee d_4$	$a=\begin{bmatrix} 0 & 1 \\ 1 & 1 \\ 0 & 1 \\ 1 & 0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_4$ $c=[\,0\ 1\ 0\,]$	$a=\begin{bmatrix} 1 & 1 \\ 1 & 0 \\ 0 & 1 \\ 1 & 0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_4$

$M_{72}^{(15)}$	$M_{72}^{(16)}$	$M_{72}^{(17)}$	$M_{72}^{(18)}$	$M_{72}^{(19)}$
$\begin{smallmatrix} K & & K^3 & & \\ \hookdownarrow & \swarrow & \downarrow & & \\ K^2 & & K^4 & K^2 & K^3 \\ & & & \searrow\downarrow a \ \swarrow b & \downarrow c \\ & & & K^4 & K \end{smallmatrix}$	$\begin{smallmatrix} K & & K^2 & & \\ \hookdownarrow & \swarrow & \hookdownarrow & & \\ K^2 & & K^3 & K^2 & K^3 \\ & & & \searrow\downarrow a \ \swarrow b & \downarrow \\ & & & K^4 & K^2 \end{smallmatrix}$	$\begin{smallmatrix} K & & K^3 & & \\ \hookdownarrow & \swarrow & \hookdownarrow & & \\ K^2 & & K^4 & K^2 & K^3 \\ & & & \searrow\downarrow a \ \swarrow b & \downarrow c \\ & & & K^5 & K \end{smallmatrix}$	$\begin{smallmatrix} K & & K^3 & & \\ \hookdownarrow & \swarrow & \downarrow & & \\ K^2 & & K^4 & K^2 & K^3 \\ & & & \searrow\downarrow a \ \swarrow b & \downarrow \\ & & & K^4 & K^2 \end{smallmatrix}$	$\begin{smallmatrix} K & & K^3 & & \\ \hookdownarrow & \swarrow & \hookdownarrow & & \\ K^2 & & K^4 & K^3 & K^3 \\ & & & \searrow\downarrow a \ \swarrow b & \downarrow c \\ & & & K^5 & K \end{smallmatrix}$
13 2123 41	12 2123 42	13 2123 51	13 2123 42	13 2133 51
$a=\begin{bmatrix} 0 & 1 \\ 1 & 1 \\ 0 & 1 \\ 1 & 0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_4$ $c=[\,0\ 1\ 0\,]$	$a=\begin{bmatrix} 1 & 1 \\ 1 & 0 \\ 0 & 1 \\ 1 & 0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_4$	$a=\begin{bmatrix} 0 & 1 \\ 1 & 1 \\ 0 & 1 \\ 1 & 0 \\ 1 & 0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_5$ $c=[\,0\ 1\ 0\,]$	$a=\begin{bmatrix} 1 & 1 \\ 1 & 0 \\ 0 & 1 \\ 1 & 0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_4$	$a=\begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 0 & 1 & 1 \\ 1 & 0 & 1 \\ 1 & 0 & 0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_5$ $c=[\,0\ 1\ 0\,]$

$M_{72}^{(20)}$	$M_{72}^{(21)}$	$M_{72}^{(22)}$	$M_{72}^{(23)}$	$M_{72}^{(24)}$
$\begin{smallmatrix} K & & K^3 & & \\ \hookdownarrow & \swarrow & \hookdownarrow & & \\ K^2 & & K^4 & K^2 & K^3 \\ & & & \searrow\downarrow a \ \swarrow b & \downarrow \\ & & & K^5 & K^2 \end{smallmatrix}$	$\begin{smallmatrix} K & & K^3 & & \\ \hookdownarrow & \swarrow & \hookdownarrow & & \\ K^2 & & K^4 & K^3 & K^3 \\ & & & \searrow\downarrow a \ \swarrow b & \downarrow \\ & & & K^5 & K^2 \end{smallmatrix}$	$\begin{smallmatrix} K & & K^3 & & \\ \hookdownarrow & \swarrow & \hookdownarrow & & \\ K^2 & & K^4 & K^2 & K^4 \\ & & & \searrow\downarrow a \ \swarrow b & \downarrow c \\ & & & K^5 & K^2 \end{smallmatrix}$	$\begin{smallmatrix} K & & K^3 & & \\ \hookdownarrow & \swarrow & \hookdownarrow & & \\ K^2 & & K^4 & K^3 & K^4 \\ & & & \searrow\downarrow a \ \swarrow b & \downarrow c \\ & & & K^5 & K^2 \end{smallmatrix}$	$\begin{smallmatrix} K & & K^3 & & \\ \hookdownarrow & \swarrow & \hookdownarrow & & \\ K^2 & & K^4 & K^3 & K^4 \\ & & & \searrow\downarrow a \ \swarrow b & \downarrow \\ & & & K^6 & K^2 \end{smallmatrix}$
13 2123 52	13 2133 52	13 2124 52	13 2134 52	13 2134 62
$a=\begin{bmatrix} 0 & 1 \\ 1 & 0 \\ 1 & 1 \\ 0 & 1 \\ 1 & 0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_5$	$a=\begin{bmatrix} 1 & 0 & 1 \\ 0 & 1 & 1 \\ 0 & 1 & 0 \\ 0 & 1 & 1 \\ 1 & 0 & 0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_5$	$a=\begin{bmatrix} 0 & 1 \\ 1 & 1 \\ 1 & 0 \\ 0 & 1 \\ 1 & 0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_5$ $c=0\vee d_1\vee d_2\vee 0$	$a=\begin{bmatrix} 0 & 1 & 0 \\ 0 & 1 & 1 \\ 0 & 0 & 1 \\ 1 & 0 & 1 \\ 1 & 0 & 0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_5$ $c=0\vee d_1\vee d_2\vee 0$	$a=\begin{bmatrix} 1 & 0 & 1 \\ 0 & 1 & 1 \\ 0 & 0 & 1 \\ 0 & 1 & 0 \\ 0 & 1 & 0 \\ 1 & 0 & 0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_5\vee d_6$

$M_{72}^{(25)}$	$M_{72}^{(26)}$	$M_{72}^{(27)}$	$M_{72}^{(28)}$	$M_{73}^{(1)}$
$\begin{array}{ccccc} K & & K^3 & & \\ \overset{\circ}{\downarrow} & \swarrow & \overset{\circ}{\downarrow} & & \\ K^2 & & K^5 & K^3 & K^4 \\ & & \searrow & \downarrow a \;\swarrow b & \downarrow c \\ & & & K^6 & K^2 \end{array}$	$\begin{array}{ccccc} K & & K^4 & & \\ \overset{\circ}{\downarrow} & \swarrow & \overset{\circ}{\downarrow} & & \\ K^2 & & K^5 & K^3 & K^4 \\ & & \searrow & \downarrow a \;\swarrow b & \downarrow c \\ & & & K^6 & K^2 \end{array}$	$\begin{array}{ccccc} K & & K^4 & & \\ \overset{\circ}{\downarrow} & \swarrow & \overset{\circ}{\downarrow} & & \\ K^3 & & K^5 & K^3 & K^4 \\ & & \searrow & \downarrow a \;\swarrow b & \downarrow c \\ & & & K^6 & K^2 \end{array}$	$\begin{array}{ccccc} K^2 & & K^4 & & \\ \overset{\circ}{\downarrow} & \swarrow & \overset{\circ}{\downarrow} & & \\ K^3 & & K^5 & K^3 & K^4 \\ & & \searrow & \downarrow a \;\swarrow b & \downarrow c \\ & & & K^6 & K^2 \end{array}$	$\begin{array}{cccc} & K & & \\ & \downarrow & & \\ K & K^2 & K & K \\ d\searrow & \downarrow \;\; \overset{\circ}{\swarrow} & \downarrow \;\; \swarrow & \downarrow \\ & K^2 & K & K \end{array}$
13 2234 62	14 2134 62	14 3134 62	24 3134 62	1 1111 211
$a=\begin{bmatrix} 0&1&0\\0&1&1\\0&0&1\\1&0&1\\0&1&0\\1&0&0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_6$ $c=0\vee d_1\vee d_2\vee 0$	$a=\begin{bmatrix} 0&1&1\\0&0&1\\0&1&0\\1&0&1\\0&1&0\\1&0&0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_6$ $c=0\vee d_1\vee d_2\vee 0$	$a=\begin{bmatrix} 0&1&1\\0&0&1\\0&1&0\\1&1&0\\0&0&1\\1&0&0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_6$ $c=0\vee d_1\vee d_2\vee 0$	$a=\begin{bmatrix} 0&1&0\\0&1&1\\0&0&1\\1&0&1\\0&1&0\\1&0&0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_6$ $c=0\vee d_1\vee d_2\vee 0$	

$M_{73}^{(2)}$	$M_{73}^{(3)}$	$M_{73}^{(4)}$	$M_{73}^{(5)}$	$M_{73}^{(6)}$	$M_{73}^{(7)}$
$\begin{array}{cccc} & K & & \\ & \downarrow & & \\ K & K^2 & K^2 & K \\ d\searrow & \downarrow \;\; \swarrow & \downarrow \;\; \swarrow & \downarrow \\ & K^2 & K & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \downarrow & & \\ K & K^2 & K^2 & K \\ d\searrow & \downarrow \;\; \swarrow & \downarrow \;\; \overset{\circ}{\swarrow} & \downarrow \\ & K^2 & K^2 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \downarrow & & \\ K & K^2 & K^2 & K \\ d\searrow & \downarrow \;\; \overset{\circ}{\swarrow} & \downarrow \;\; \swarrow & \downarrow \\ & K^3 & K & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \downarrow & & \\ K & K^2 & K^2 & K^2 \\ d\searrow & \downarrow \;\; \swarrow & \downarrow \;\; \swarrow & \downarrow \\ & K^2 & K^2 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \downarrow & & \\ K & K^2 & K^2 & K \\ d\searrow & \downarrow \;\; \overset{\circ}{\swarrow} & \downarrow \;\; \overset{\circ}{\swarrow} & \downarrow \\ & K^3 & K^2 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \downarrow & & \\ K^2 & K^2 & K^2 & K \\ a\searrow & \downarrow \;\; \overset{\circ}{\swarrow} & \downarrow \;\; \swarrow & \downarrow \\ & K^3 & K & K \end{array}$
1 1121 211	1 1121 221	1 1121 311	1 1122 221	1 1121 321	1 2121 311
					$a=\begin{bmatrix} 1&1\\1&0\\0&1 \end{bmatrix}$

$M_{73}^{(8)}$	$M_{73}^{(9)}$	$M_{73}^{(10)}$	$M_{73}^{(11)}$	$M_{73}^{(12)}$
$\begin{array}{cccc} & K & & \\ & \overset{\circ}{\downarrow} & & \\ K & K^2 & K^2 & K^2 \\ d\searrow & \overset{\circ}{\downarrow} \;\; \swarrow & \downarrow \;\; \swarrow & \overset{\circ}{\downarrow} \\ & K^3 & K^2 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \downarrow & & \\ K & K^2 & K^3 & K \\ d\searrow & \downarrow \;\; \swarrow & \downarrow \;\; \overset{\circ}{\swarrow} & \downarrow \\ & K^3 & K^2 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \downarrow & & \\ K^2 & K^2 & K^2 & K \\ a\searrow & \downarrow \;\; \overset{\circ}{\swarrow} & \downarrow \;\; \overset{\circ}{\swarrow} & \downarrow \\ & K^3 & K^2 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \downarrow & & \\ K & K^2 & K^3 & K^2 \\ d\searrow & \downarrow \;\; \swarrow & \downarrow \;\; \swarrow & \downarrow \\ & K^3 & K^2 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \overset{\circ}{\downarrow} & & \\ K^2 & K^2 & K^2 & K^2 \\ a\searrow & \overset{\circ}{\downarrow} \;\; \swarrow & \downarrow \;\; \swarrow & \overset{\circ}{\downarrow} \\ & K^3 & K^2 & K \end{array}$
1 1122 321	1 1131 321	1 2121 321	1 1132 321	1 2122 321
		$a=\begin{bmatrix} 1&1\\1&0\\0&1 \end{bmatrix}$		$a=\begin{bmatrix} 1&1\\1&0\\0&1 \end{bmatrix}$

$M_{73}^{(13)}$	$M_{73}^{(14)}$	$M_{73}^{(15)}$	$M_{73}^{(16)}$	$M_{73}^{(17)}$
$\begin{array}{cccc} & K & & \\ & \downarrow & & \\ K^2 & K^2 & K^3 & K \\ a\searrow & \downarrow \;\; \swarrow & \downarrow \;\; \overset{\circ}{\swarrow} & \downarrow \\ & K^3 & K^2 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \downarrow & & \\ K & K^2 & K^3 & K^2 \\ d\searrow & \downarrow \;\; \swarrow & \downarrow \;\; \overset{\circ}{\swarrow} & \downarrow \\ & K^3 & K^3 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \downarrow & & \\ K^2 & K^2 & K^3 & K^2 \\ a\searrow & \downarrow \;\; \swarrow & \downarrow \;\; \swarrow & \downarrow \\ & K^3 & K^2 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \overset{\circ}{\downarrow} & & \\ K^2 & K^2 & K^3 & K \\ a\searrow & \downarrow b \;\; \swarrow & \downarrow \;\; \overset{\circ}{\swarrow} & \downarrow \\ & K^4 & K^2 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \downarrow & & \\ K^2 & K^2 & K^3 & K^2 \\ a\searrow & \downarrow \;\; \swarrow & \downarrow \;\; \overset{\circ}{\swarrow} & \downarrow \\ & K^3 & K^3 & K \end{array}$
1 2131 321	1 1132 331	1 2132 321	1 2131 421	1 2132 331
$a=\begin{bmatrix} 1&1\\1&0\\0&1 \end{bmatrix}$		$a=\begin{bmatrix} 1&1\\1&0\\0&1 \end{bmatrix}$	$a=\begin{bmatrix} 0&1\\1&1\\0&1\\1&0 \end{bmatrix}$ $b=d_1\vee d_4$	$a=\begin{bmatrix} 1&1\\1&0\\0&1 \end{bmatrix}$

$M_{73}^{(18)}$	$M_{73}^{(19)}$	$M_{73}^{(20)}$	$M_{73}^{(21)}$	$M_{73}^{(22)}$
$\begin{array}{cccc} & K & & \\ & \overset{\circ}{\downarrow} & & \\ K^2 & K^2 & K^3 & K^2 \\ a\searrow & \downarrow b \;\; \swarrow & \downarrow \;\; \swarrow & \downarrow \\ & K^4 & K^2 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \overset{\circ}{\downarrow} & & \\ K^2 & K^3 & K^3 & K \\ a\searrow & \downarrow b \;\; \swarrow & \downarrow \;\; \overset{\circ}{\swarrow} & \downarrow \\ & K^4 & K^2 & K \end{array}$	$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K^2 & K^3 & K^3 & K \\ b\searrow & \downarrow c \;\; \swarrow & \downarrow \;\; \overset{\circ}{\swarrow} & \downarrow \\ & K^4 & K^2 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \overset{\circ}{\downarrow} & & \\ K^2 & K^2 & K^3 & K^2 \\ a\searrow & \downarrow b \;\; \swarrow & \downarrow \;\; \overset{\circ}{\swarrow} & \downarrow \\ & K^4 & K^3 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \overset{\circ}{\downarrow} & & \\ K^2 & K^3 & K^3 & K^2 \\ a\searrow & \downarrow b \;\; \swarrow & \downarrow \;\; \swarrow & \downarrow \\ & K^4 & K^2 & K \end{array}$
1 2132 421	1 2231 421	2 2131 421	1 2132 431	1 2232 421
$a=\begin{bmatrix} 0&1\\1&1\\0&1\\1&0 \end{bmatrix}$ $b=d_1\vee d_4$	$a=\begin{bmatrix} 1&1\\1&0\\0&1\\1&0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_4$	$a=d_1\vee d_3$ $b=\begin{bmatrix} 0&1\\1&1\\0&1\\1&0 \end{bmatrix}$ $c=d_1\vee d_2\vee d_4$	$a=\begin{bmatrix} 0&1\\1&1\\0&1\\1&0 \end{bmatrix}$ $b=d_1\vee d_4$	$a=\begin{bmatrix} 1&1\\1&0\\0&1\\1&0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_4$

$M_{73}^{(23)}$	$M_{73}^{(24)}$	$M_{73}^{(25)}$	$M_{73}^{(26)}$	$M_{73}^{(27)}$
$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K^2 & K^3 & K^3 & K^2 \\ b\searrow & \downarrow c\ \swarrow & \downarrow\ \swarrow & \downarrow \\ & K^4 & K^2 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \circ\!\downarrow & & \\ K^2 & K^2 & K^4 & K^2 \\ a\searrow & \downarrow b\ \swarrow & \downarrow c\ \swarrow & \downarrow \\ & K^4 & K^3 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \circ\!\downarrow & & \\ K^2 & K^3 & K^3 & K^2 \\ a\searrow & \downarrow b\ \swarrow & \downarrow\ \swarrow\circ & \downarrow \\ & K^4 & K^3 & K \end{array}$	$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K^2 & K^3 & K^3 & K^2 \\ b\searrow & \downarrow c\ \swarrow & \downarrow\ \swarrow\circ & \downarrow \\ & K^4 & K^3 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \circ\!\downarrow & & \\ K^2 & K^3 & K^4 & K^2 \\ a\searrow & \downarrow b\ \swarrow & \downarrow c\ \swarrow & \downarrow \\ & K^4 & K^3 & K \end{array}$
$\begin{array}{cccc} & 2 & & \\ 2 & 1 & 3 & 2 \\ & 4 & 2 & 1 \end{array}$	$\begin{array}{cccc} & 1 & & \\ 2 & 1 & 4 & 2 \\ & 4 & 3 & 1 \end{array}$	$\begin{array}{cccc} & 1 & & \\ 2 & 2 & 3 & 2 \\ & 4 & 3 & 1 \end{array}$	$\begin{array}{cccc} & 2 & & \\ 2 & 1 & 3 & 2 \\ & 4 & 3 & 1 \end{array}$	$\begin{array}{cccc} & 1 & & \\ 2 & 2 & 4 & 2 \\ & 4 & 3 & 1 \end{array}$
$a=d_1\vee d_3$ $b=\begin{bmatrix} 0&1\\1&1\\0&1\\1&0 \end{bmatrix}$ $c=d_1\vee d_2\vee d_4$	$a=\begin{bmatrix} 0&1\\1&1\\0&1\\1&0 \end{bmatrix}$ $b=d_1\vee d_4$ $c=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix} 1&1\\1&0\\0&1\\1&0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_4$	$a=d_1\vee d_3$ $b=\begin{bmatrix} 0&1\\1&1\\0&1\\1&0 \end{bmatrix}$ $c=d_1\vee d_2\vee d_4$	$a=\begin{bmatrix} 1&1\\1&0\\0&1\\1&0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_4$ $c=d_1\vee d_2\vee 0\vee d_3$

$M_{73}^{(28)}$	$M_{73}^{(29)}$	$M_{73}^{(30)}$	$M_{73}^{(31)}$	$M_{73}^{(32)}$
$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K^2 & K^3 & K^4 & K^2 \\ b\searrow & \downarrow c\ \swarrow & \downarrow e\ \swarrow & \downarrow \\ & K^4 & K^3 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \circ\!\downarrow & & \\ K^2 & K^3 & K^4 & K^2 \\ a\searrow & \downarrow b\ \swarrow & \downarrow\ \swarrow\circ & \downarrow \\ & K^5 & K^3 & K \end{array}$	$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K^2 & K^3 & K^4 & K^2 \\ b\searrow & \downarrow c\ \swarrow & \downarrow\ \swarrow\circ & \downarrow \\ & K^5 & K^3 & K \end{array}$	$\begin{array}{cccc} & K & & \\ & \circ\!\downarrow & & \\ K^3 & K^3 & K^4 & K^2 \\ a\searrow & \downarrow b\ \swarrow & \downarrow\ \swarrow\circ & \downarrow \\ & K^5 & K^3 & K \end{array}$	$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K^2 & K^4 & K^4 & K^2 \\ b\searrow & \downarrow c\ \swarrow & \downarrow\ \swarrow\circ & \downarrow \\ & K^5 & K^3 & K \end{array}$
$\begin{array}{cccc} & 2 & & \\ 2 & 1 & 4 & 2 \\ & 4 & 3 & 1 \end{array}$	$\begin{array}{cccc} & 1 & & \\ 2 & 2 & 4 & 2 \\ & 5 & 3 & 1 \end{array}$	$\begin{array}{cccc} & 2 & & \\ 2 & 1 & 4 & 2 \\ & 5 & 3 & 1 \end{array}$	$\begin{array}{cccc} & 1 & & \\ 3 & 2 & 4 & 2 \\ & 5 & 3 & 1 \end{array}$	$\begin{array}{cccc} & 2 & & \\ 2 & 2 & 4 & 2 \\ & 5 & 3 & 1 \end{array}$
$a=d_1\vee d_3$ $b=\begin{bmatrix} 0&1\\1&1\\0&1\\1&0 \end{bmatrix}$ $c=d_1\vee d_2\vee d_4$ $e=d_1\vee d_2\vee 0\vee d_3$	$a=\begin{bmatrix} 0&1\\1&0\\1&1\\0&1\\1&0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_5$	$a=d_1\vee d_3$ $b=\begin{bmatrix} 0&1\\1&1\\0&1\\1&0\\1&0 \end{bmatrix}$ $c=d_1\vee d_2\vee d_5$	$a=\begin{bmatrix} 1&0&1\\0&1&1\\0&1&0\\0&1&1\\1&0&0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_5$	$a=d_1\vee d_4$ $b=\begin{bmatrix} 0&1\\1&1\\1&0\\0&1\\1&0 \end{bmatrix}$ $c=d_1\vee d_2\vee d_3\vee d_5$

$M_{73}^{(33)}$	$M_{73}^{(34)}$	$M_{73}^{(35)}$	$M_{73}^{(36)}$	$M_{73}^{(37)}$
$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K^3 & K^3 & K^4 & K^2 \\ b\searrow & \downarrow c\ \swarrow & \downarrow\ \swarrow\circ & \downarrow \\ & K^5 & K^3 & K \end{array}$	$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K^3 & K^4 & K^4 & K^2 \\ b\searrow & \downarrow c\ \swarrow & \downarrow\ \swarrow\circ & \downarrow \\ & K^5 & K^3 & K \end{array}$	$\begin{array}{cccc} & K^2 & & \\ & \circ\!\downarrow & & \\ K^3 & K^4 & K^4 & K^2 \\ a\searrow & \downarrow b\ \swarrow & \downarrow\ \swarrow\circ & \downarrow \\ & K^6 & K^3 & K \end{array}$	$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K^3 & K^4 & K^5 & K^2 \\ b\searrow & \downarrow c\ \swarrow & \downarrow\ \swarrow\circ & \downarrow \\ & K^6 & K^3 & K \end{array}$	$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K^3 & K^4 & K^5 & K^2 \\ b\searrow & \downarrow c\ \swarrow & \downarrow\ \swarrow\circ & \downarrow \\ & K^6 & K^4 & K \end{array}$
$\begin{array}{cccc} & 2 & & \\ 3 & 1 & 4 & 2 \\ & 5 & 3 & 1 \end{array}$	$\begin{array}{cccc} & 2 & & \\ 3 & 2 & 4 & 2 \\ & 5 & 3 & 1 \end{array}$	$\begin{array}{cccc} & 2 & & \\ 3 & 2 & 4 & 2 \\ & 6 & 3 & 1 \end{array}$	$\begin{array}{cccc} & 2 & & \\ 3 & 2 & 5 & 2 \\ & 6 & 3 & 1 \end{array}$	$\begin{array}{cccc} & 2 & & \\ 3 & 2 & 5 & 2 \\ & 6 & 4 & 1 \end{array}$
$a=d_1\vee d_3$ $b=\begin{bmatrix} 0&1&0\\0&0&1\\0&1&1\\1&0&1\\1&0&0 \end{bmatrix}$ $c=d_1\vee d_2\vee d_5$	$a=d_1\vee d_4$ $b=\begin{bmatrix} 0&1&0\\0&1&1\\0&0&1\\1&0&1\\1&0&0 \end{bmatrix}$ $c=d_1\vee d_2\vee d_3\vee d_5$	$a=\begin{bmatrix} 1&0&1\\0&1&1\\0&0&1\\0&1&0\\0&1&0\\1&0&0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_5\vee d_6$	$a=d_1\vee d_4$ $b=\begin{bmatrix} 0&1&1\\0&0&1\\0&1&0\\1&0&1\\0&1&0\\1&0&0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_6$	$a=d_1\vee d_4$ $b=\begin{bmatrix} 0&1&0\\0&1&1\\0&0&1\\1&0&1\\0&1&0\\1&0&0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_6$

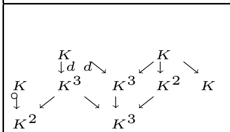
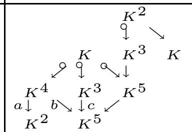
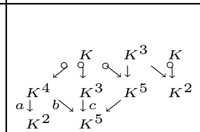
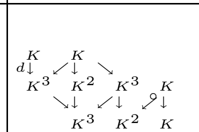
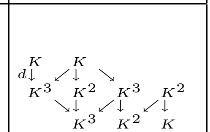
$M_{73}^{(38)}$	$M_{73}^{(39)}$	$M_{74}^{(1)}$	$M_{75}^{(1)}$	$M_{76}^{(1)}$
$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K^3 & K^4 & K^5 & K^3 \\ b\searrow & \downarrow c\ \swarrow & \downarrow\ \swarrow\circ & \downarrow \\ & K^6 & K^4 & K \end{array}$	$\begin{array}{cccc} & K^2 & & \\ & \downarrow a & & \\ K^3 & K^4 & K^5 & K^3 \\ b\searrow & \downarrow c\ \swarrow & \downarrow\ \swarrow\circ & \downarrow \\ & K^6 & K^4 & K^2 \end{array}$	$\begin{array}{ccccc} & & & K & \\ & & & \downarrow & \searrow \\ K & K & K^2 & K^2 & K \\ \circ\!\searrow & \downarrow d\ \swarrow & \downarrow & \swarrow & \\ & K^2 & K^2 & & \end{array}$	$\begin{array}{ccccc} & & K & K & \\ & & \downarrow & \searrow\downarrow & \searrow \\ K & K & K^2 & K & K \\ \circ\!\searrow & \downarrow d\ \swarrow & & & \\ & K^2 & & & \end{array}$	$\begin{array}{cccc} & K & & \\ \swarrow & \circ\!\downarrow & & \\ K & K^2 & & \\ & \circ\!\downarrow & & \\ & K^3 & K & K^2 \\ & & \searrow\downarrow d\ \swarrow & \circ\!\downarrow \\ & & K^3 & K \end{array}$
$\begin{array}{cccc} & 2 & & \\ 3 & 2 & 5 & 3 \\ & 6 & 4 & 1 \end{array}$	$\begin{array}{cccc} & 2 & & \\ 3 & 2 & 5 & 3 \\ & 6 & 4 & 2 \end{array}$	$\begin{array}{ccccc} & & & 1 & \\ 1 & 1 & 2 & 1 & 1 \\ & 2 & 2 & & \end{array}$	$\begin{array}{ccccc} & & 1 & 1 & \\ 1 & 1 & 1 & 1 & 1 \\ & 2 & & & \end{array}$	$\begin{array}{cccc} & 1 & & \\ 1 & 1 & & \\ & 1 & 1 & 2 \\ & & 3 & 1 \end{array}$
$a=d_1\vee d_4$ $b=\begin{bmatrix} 0&1&0\\0&1&1\\0&0&1\\1&0&1\\0&1&0\\1&0&0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_6$	$a=d_1\vee d_4$ $b=\begin{bmatrix} 0&1&1\\0&0&1\\0&1&0\\1&1&0\\0&0&1\\1&0&0 \end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_6$			

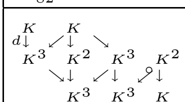
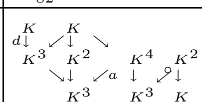
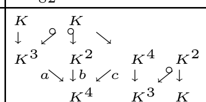
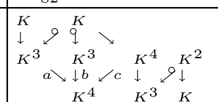
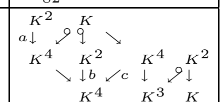
$M_{76}^{(2)}$	$M_{76}^{(3)}$	$M_{76}^{(4)}$	$M_{76}^{(5)}$	$M_{76}^{(6)}$
K $\swarrow\ \overset{\circ}{\downarrow}$ $K\quad K^2$ $\overset{\circ}{\downarrow}$ $K^3\quad K^2\quad K^2$ $\searrow\downarrow a\ \swarrow\quad \overset{\circ}{\downarrow}$ $K^3\quad K$	K $\swarrow\ \overset{\circ}{\downarrow}$ $K\quad K^2$ $\overset{\circ}{\downarrow}$ $K^3\quad K^2\quad K^2$ $\searrow\downarrow a\ \swarrow b\ \downarrow$ $K^4\quad K$	K^2 $\swarrow\ \overset{\circ}{\downarrow}$ $K\quad K^3$ $\downarrow$ $K^4\quad K^2\quad K^2$ $\searrow\downarrow a\ \swarrow b\ \downarrow$ $K^4\quad K$	K $\swarrow\ \overset{\circ}{\downarrow}$ $K\quad K^2$ $\overset{\circ}{\downarrow}$ $K^3\quad K^2\quad K^3$ $\searrow\downarrow a\ \swarrow b\ \downarrow c$ $K^4\quad K$	K^2 $\swarrow\ \overset{\circ}{\downarrow}$ $K\quad K^3$ $\downarrow$ $K^4\quad K^2\quad K^3$ $\searrow\downarrow a\ \swarrow b\ \downarrow c$ $K^4\quad K$
1 11 122 31	1 11 122 41	2 11 122 41	1 11 123 41	2 11 123 41
$a=\begin{bmatrix}1&1\\1&0\\0&1\end{bmatrix}$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_4$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_4$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_4$ $c=[\,0\ 1\ 0\,]$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_4$ $c=[\,0\ 1\ 0\,]$

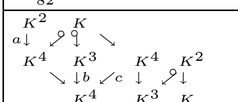
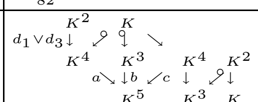
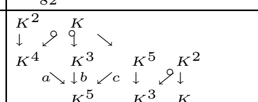
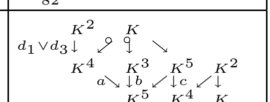
$M_{76}^{(7)}$	$M_{76}^{(8)}$	$M_{76}^{(9)}$	$M_{76}^{(10)}$	$M_{76}^{(11)}$
K $\swarrow\ \overset{\circ}{\downarrow}$ $K\quad K^2$ $\overset{\circ}{\downarrow}$ $K^3\quad K^2\quad K^3$ $\searrow\downarrow a\ \swarrow b\ \downarrow$ $K^4\quad K^2$	K^2 $\swarrow\ \overset{\circ}{\downarrow}$ $K\quad K^3$ $\overset{\circ}{\downarrow}$ $K^4\quad K^2\quad K^3$ $\searrow\downarrow a\ \swarrow b\ \downarrow c$ $K^5\quad K$	K^2 $\swarrow\ \overset{\circ}{\downarrow}$ $K\quad K^3$ $\downarrow$ $K^4\quad K^2\quad K^3$ $\searrow\downarrow a\ \swarrow b\ \downarrow$ $K^4\quad K^2$	K^2 $\swarrow\ \overset{\circ}{\downarrow}$ $K\quad K^3$ $\overset{\circ}{\downarrow}$ $K^4\quad K^3\quad K^3$ $\searrow\downarrow a\ \swarrow b\ \downarrow c$ $K^5\quad K$	K^2 $\swarrow\ \overset{\circ}{\downarrow}$ $K\quad K^3$ $\overset{\circ}{\downarrow}$ $K^4\quad K^2\quad K^3$ $\searrow\downarrow a\ \swarrow b\ \downarrow$ $K^5\quad K^2$
1 11 123 42	2 11 123 51	2 11 123 42	2 11 133 51	2 11 123 52
$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_4$	$a=\begin{bmatrix}0&1\\1&1\\0&1\\1&0\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_5$ $c=[\,0\ 1\ 0\,]$	$a=\begin{bmatrix}1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_4$	$a=\begin{bmatrix}0&1&0\\0&0&1\\0&1&1\\1&0&1\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_5$ $c=[\,0\ 1\ 0\,]$	$a=\begin{bmatrix}0&1\\1&0\\1&1\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_5$

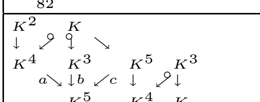
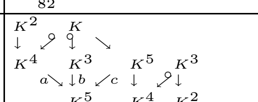
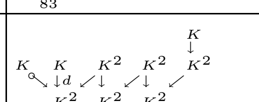
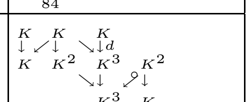
$M_{76}^{(12)}$	$M_{76}^{(13)}$	$M_{76}^{(14)}$	$M_{76}^{(15)}$	$M_{76}^{(16)}$
K^2 $\swarrow\ \overset{\circ}{\downarrow}$ $K\quad K^3$ $\overset{\circ}{\downarrow}$ $K^4\quad K^3\quad K^3$ $\searrow\downarrow a\ \swarrow b\ \downarrow$ $K^5\quad K^2$	K^2 $\swarrow\ \overset{\circ}{\downarrow}$ $K\quad K^3$ $\overset{\circ}{\downarrow}$ $K^4\quad K^2\quad K^4$ $\searrow\downarrow a\ \swarrow b\ \downarrow c$ $K^5\quad K^2$	K^2 $\swarrow\ \overset{\circ}{\downarrow}$ $K\quad K^3$ $\overset{\circ}{\downarrow}$ $K^4\quad K^3\quad K^4$ $\searrow\downarrow a\ \swarrow b\ \downarrow c$ $K^5\quad K^2$	K^2 $\swarrow\ \overset{\circ}{\downarrow}$ $K\quad K^3$ $\overset{\circ}{\downarrow}$ $K^4\quad K^3\quad K^4$ $\searrow\downarrow a\ \swarrow b\ \downarrow$ $K^6\quad K^2$	K^3 $\swarrow\ \overset{\circ}{\downarrow}$ $K\quad K^4$ $\overset{\circ}{\downarrow}$ $K^5\quad K^3\quad K^4$ $\searrow\downarrow a\ \swarrow b\ \downarrow c$ $K^6\quad K^2$
2 11 133 52	2 11 124 52	2 11 134 52	2 11 134 62	3 11 134 62
$a=\begin{bmatrix}1&0&1\\0&1&1\\0&1&0\\0&1&1\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_5$	$a=\begin{bmatrix}0&1\\1&1\\1&0\\0&1\\1&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_5$ $c=0\vee d_1\vee d_2\vee 0$	$a=\begin{bmatrix}0&1&0\\0&1&1\\0&0&1\\1&0&1\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_5$ $c=0\vee d_1\vee d_2\vee 0$	$a=\begin{bmatrix}1&0&1\\0&1&1\\0&0&1\\0&1&0\\0&1&0\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_5\vee d_6$	$a=\begin{bmatrix}0&1&1\\0&0&1\\0&1&0\\1&0&1\\0&1&0\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_6$ $c=0\vee d_1\vee d_2\vee 0$

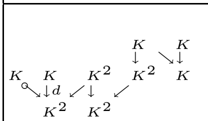
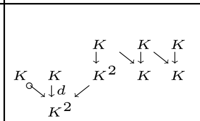
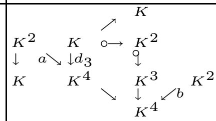
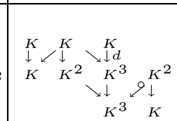
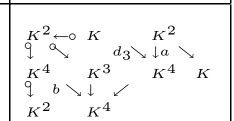
$M_{76}^{(17)}$	$M_{76}^{(18)}$	$M_{76}^{(19)}$	$M_{77}^{(1)}$	$M_{78}^{(1)}$
K^2 $\swarrow\ \overset{\circ}{\downarrow}$ $K\quad K^3$ $\overset{\circ}{\downarrow}$ $K^5\quad K^3\quad K^4$ $\searrow\downarrow a\ \swarrow b\ \downarrow c$ $K^6\quad K^2$	K^2 $\swarrow\ \overset{\circ}{\downarrow}$ $K\quad K^4$ $\overset{\circ}{\downarrow}$ $K^5\quad K^3\quad K^4$ $\searrow\downarrow a\ \swarrow b\ \downarrow c$ $K^6\quad K^2$	K^3 $\swarrow\ \overset{\circ}{\downarrow}$ $K^2\quad K^4$ $\overset{\circ}{\downarrow}$ $K^5\quad K^3\quad K^4$ $\searrow\downarrow a\ \swarrow b\ \downarrow c$ $K^6\quad K^2$	$K\quad K$ $\swarrow\downarrow\ \searrow\downarrow d$ $K\quad K^2\quad K^3\quad K^2$ $\searrow\downarrow\ \ \swarrow\overset{\circ}{\ }\downarrow$ $K^3\quad K$	$K\ \circ\!\!\rightarrow\ K^2$ $\overset{\circ}{\downarrow}\quad \downarrow a\ b\ \searrow$ $K^2\quad K^3\quad K^4\quad K^2$ $\overset{\circ}{\searrow}\ \downarrow\ \swarrow c\ \downarrow\ \swarrow\ \overset{\circ}{\downarrow}$ $K^3\quad K^3\quad K$
2 11 234 62	2 12 134 62	3 21 134 62	11 1112 31	11 1122 331
$a=\begin{bmatrix}0&1&0\\0&1&1\\0&0&1\\1&0&1\\0&1&0\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_6$ $c=0\vee d_1\vee d_2\vee 0$	$a=\begin{bmatrix}0&1&1\\0&0&1\\0&1&0\\1&1&0\\0&0&1\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_6$ $c=0\vee d_1\vee d_2\vee 0$	$a=\begin{bmatrix}0&1&0\\0&1&1\\0&0&1\\1&0&1\\0&1&0\\1&0&0\end{bmatrix}$ $b=d_1\vee d_2\vee d_3\vee d_6$ $c=0\vee d_1\vee d_2\vee 0$		$a=\begin{bmatrix}1&0\\1&0\\0&1\end{bmatrix}\ b=d_2\vee d_4$ $a=\begin{bmatrix}0&1&0&1\\1&1&0&0\\1&0&1&0\end{bmatrix}$

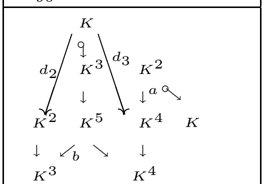
$M_{79}^{(1)}$	$M_{80}^{(1)}$	$M_{81}^{(1)}$	$M_{82}^{(1)}$	$M_{82}^{(2)}$
				
1 1 12111 2 3	2 111 321 25	131 3212 25	11 1121 321	11 1122 321
	$a=0\vee d_1\vee d_2\vee 0$ $b=d_1\vee d_2\vee d_4\vee d_5$ $c=\begin{bmatrix}1&0&0\\1&1&0\\1&0&0\\0&1&0\\0&0&1\end{bmatrix}$	$a=0\vee d_1\vee d_2\vee 0$ $b=d_1\vee d_2\vee d_4\vee d_5$ $c=\begin{bmatrix}1&0&0\\1&1&0\\1&0&0\\0&1&0\\0&0&1\end{bmatrix}$		

$M_{82}^{(3)}$	$M_{82}^{(4)}$	$M_{82}^{(5)}$	$M_{82}^{(6)}$	$M_{82}^{(7)}$
				
11 1122 331	11 1132 331	11 1132 431	11 1232 431	21 1132 431
	$a=d_1\vee d_1\vee d_2\vee d_3$	$a=\begin{bmatrix}1&0&0\\0&1&0\\0&0&0\\1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0\\1&0\\1&0\\0&1\end{bmatrix}$ $c=d_4\vee d_1\vee d_2\vee d_3$	$a=\begin{bmatrix}1&0&0\\0&1&0\\0&0&0\\1&0&1\end{bmatrix}$ $b=\begin{bmatrix}0&1&0\\1&1&0\\1&0&0\\0&0&1\end{bmatrix}$ $c=d_4\vee d_1\vee d_2\vee d_3$	$a=\begin{bmatrix}1&0\\0&1\\0&0\\0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0\\1&0\\1&0\\0&1\end{bmatrix}$ $c=d_4\vee d_1\vee d_2\vee d_3$

$M_{82}^{(8)}$	$M_{82}^{(9)}$	$M_{82}^{(10)}$	$M_{82}^{(11)}$
			
21 1232 431	21 1232 531	21 1242 531	21 1242 541
$a=\begin{bmatrix}1&0\\0&1\\0&0\\0&1\end{bmatrix}$ $b=\begin{bmatrix}1&1&0\\0&1&0\\1&0&0\\0&0&1\end{bmatrix}$ $c=d_4\vee d_1\vee d_2\vee d_3$	$a=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&0&0\\0&0&1&0\\1&0&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0&0\\1&1&0\\1&0&0\\0&1&0\\0&0&1\end{bmatrix}$ $c=d_5\vee d_1\vee d_2\vee d_3$	$a=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&0&0&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0&0\\1&1&0\\1&0&0\\0&1&0\\0&0&1\end{bmatrix}$ $c=d_5\vee d_1\vee d_2\vee d_3\vee d_4$	$a=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&0&0\\0&0&1&0\\1&0&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0&0\\1&1&0\\1&0&0\\0&1&0\\0&0&1\end{bmatrix}$ $c=d_1\vee d_2\vee 0\vee d_3\vee d_4$

$M_{82}^{(12)}$	$M_{82}^{(13)}$	$M_{83}^{(1)}$	$M_{84}^{(1)}$
			
21 1243 541	21 1243 542	1 11221 222	111 1112 31
$a=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&0&0&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0&0\\0&1&0\\1&1&0\\0&1&0\\0&0&1\end{bmatrix}$ $c=d_5\vee d_1\vee d_2\vee d_3\vee d_4$	$a=\begin{bmatrix}1&0&0&0\\0&1&0&0\\0&0&1&0\\0&0&0&0\\0&1&0&1\end{bmatrix}$ $b=\begin{bmatrix}1&0&0\\1&1&0\\1&0&0\\0&1&0\\0&0&1\end{bmatrix}$ $c=d_5\vee d_1\vee d_2\vee d_3\vee d_4$		

$M_{85}^{(1)}$	$M_{86}^{(1)}$	$M_{87}^{(1)}$	$M_{88}^{(1)}$	$M_{89}^{(1)}$
				
11 11211 22	111 11111 2	1 211 1312 4	111 1112 31	112 2111 24
		$a=d_1 \vee d_4$ $b=\begin{bmatrix} 0 & 1 \\ 1 & 1 \\ 0 & 1 \\ 1 & 0 \end{bmatrix}$		$a=d_1 \vee d_4$ $b=\begin{bmatrix} 0 & 1 & 0 & 0 \\ 1 & 1 & 1 & 0 \\ 0 & 1 & 0 & 1 \\ 1 & 0 & 0 & 0 \end{bmatrix}$

$M_{90}^{(1)}$

1 22 1211 3 4
$a=\begin{bmatrix} 1 & 0 \\ 0 & 1 \\ 0 & 0 \\ 1 & 1 \end{bmatrix}$ $b=\begin{bmatrix} 0 & 1 & 0 & 1 & 0 \\ 1 & 1 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 & 1 \end{bmatrix}$

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Received 17 August 2001;
revised 22 November 2001 (4105)