These are the *Mathematica* solutions for the paper:

“Permutation-type solutions to the Yang-Baxter and other n-simplex equations” by J. Hietarinta.

computations by Dara O Shayda

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<< Notation`
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This formulation is incomprehensible and I guessed how it works:

In order to write the n-simplex equations in terms of A and B let us further define (in analogue with (2))

$$(A_{K_1\ldots K_n})_i^j = \begin{cases} A_\alpha^\beta, & \text{if } i = K_\alpha,\ j = K_\beta \text{ for some } \alpha,\ \beta, \\ \delta_i^j, & \text{otherwise,} \end{cases} \tag{11}$$

$$(B_{K_1\ldots K_n})_i = \begin{cases} B_i, & \text{if } i = K_\alpha, \text{ for some } \alpha, \\ 0, & \text{otherwise,} \end{cases} \tag{12}$$

so that

$$(R_{K_1\ldots K_n})_{i_1\ldots i_N}^{j_1\ldots j_N} = \prod_{\mu=1}^{N} \delta^{j_n}_{(A_{K_1\ldots K_n})_\mu^\nu i_\nu + (B_{K_1\ldots K_n})_\mu}, \tag{13}$$

where now the ν summation runs from 1 to N.

```
Notation[ R_{i_,j_} ⟹ makeA[A, {i_, j_}, 3] ]
Notation[ R_{i_,j_,k_} ⟹ makeA[A, {i_, j_, k_}, 6] ]
Notation[ R_{i_,j_,k_,h_} ⟹ makeA[A, {i_, j_, k_, h_}, 10] ]

makeMatrix[dim_, a_] := Array[Subscript[a, #1, #2] &, dim]

(* makeA generates the A matrices in Hietarinta paper *)

makeA[A_, list_, n_] := Module[{res, i, j, k},

  res = ConstantArray[-1, {n, n}];

  Table[If[MemberQ[list, i] != True, res [[i]][[j]] = KroneckerDelta[i, j];
    res [[j]][[i]] = KroneckerDelta[j, i] ], {i, 1, n}, {j, 1, n}];

  Table[k = 1; Table[
    If[res[[list[[i]]]][[j]] == -1, res[[list[[i]]]][[j]] = A[[i]][[k]]; k = k + 1];,
    {j, 1, n}], {i , 1, Length[list]}];
  res

 ]
```

4-simplex

In[30]:=

```
A = makeMatrix[{4, 4}, a];
A // MatrixForm
```

Out[31]//MatrixForm=

$$\begin{pmatrix} a_{1,1} & a_{1,2} & a_{1,3} & a_{1,4} \\ a_{2,1} & a_{2,2} & a_{2,3} & a_{2,4} \\ a_{3,1} & a_{3,2} & a_{3,3} & a_{3,4} \\ a_{4,1} & a_{4,2} & a_{4,3} & a_{4,4} \end{pmatrix}$$

Make the R matrices:

In[32]:= $R_{1,2,3,4}$ // MatrixForm

Out[32]//MatrixForm=

$$\begin{pmatrix} a_{1,1} & a_{1,2} & a_{1,3} & a_{1,4} & 0 & 0 & 0 & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & a_{2,3} & a_{2,4} & 0 & 0 & 0 & 0 & 0 & 0 \\ a_{3,1} & a_{3,2} & a_{3,3} & a_{3,4} & 0 & 0 & 0 & 0 & 0 & 0 \\ a_{4,1} & a_{4,2} & a_{4,3} & a_{4,4} & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix}$$

In[33]:= $R_{1,5,6,7}$ // MatrixForm

Out[33]//MatrixForm=

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 & a_{1,2} & a_{1,3} & a_{1,4} & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ a_{2,1} & 0 & 0 & 0 & a_{2,2} & a_{2,3} & a_{2,4} & 0 & 0 & 0 \\ a_{3,1} & 0 & 0 & 0 & a_{3,2} & a_{3,3} & a_{3,4} & 0 & 0 & 0 \\ a_{4,1} & 0 & 0 & 0 & a_{4,2} & a_{4,3} & a_{4,4} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix}$$

In[34]:=

$R_{2,5,8,9}$ // MatrixForm

Out[34]//MatrixForm=

$$\begin{pmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & a_{1,1} & 0 & 0 & a_{1,2} & 0 & 0 & a_{1,3} & a_{1,4} & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & a_{2,1} & 0 & 0 & a_{2,2} & 0 & 0 & a_{2,3} & a_{2,4} & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & a_{3,1} & 0 & 0 & a_{3,2} & 0 & 0 & a_{3,3} & a_{3,4} & 0 \\ 0 & a_{4,1} & 0 & 0 & a_{4,2} & 0 & 0 & a_{4,3} & a_{4,4} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix}$$

In[35]:=

$R_{3,6,8,10}$ // MatrixForm

Out[35]//MatrixForm=

$$\begin{pmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & a_{1,1} & 0 & 0 & a_{1,2} & 0 & a_{1,3} & 0 & a_{1,4} \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & a_{2,1} & 0 & 0 & a_{2,2} & 0 & a_{2,3} & 0 & a_{2,4} \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & a_{3,1} & 0 & 0 & a_{3,2} & 0 & a_{3,3} & 0 & a_{3,4} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & a_{4,1} & 0 & 0 & a_{4,2} & 0 & a_{4,3} & 0 & a_{4,4} \end{pmatrix}$$

In[36]:=

```
R4,7,9,10 // MatrixForm
```

Out[36]//MatrixForm=

$$\begin{pmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{1,1} & 0 & 0 & a_{1,2} & 0 & a_{1,3} & a_{1,4} \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{2,1} & 0 & 0 & a_{2,2} & 0 & a_{2,3} & a_{2,4} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{3,1} & 0 & 0 & a_{3,2} & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & a_{4,1} & 0 & 0 & a_{4,2} & 0 & a_{4,3} & a_{4,4} \end{pmatrix}$$

Too large set of equations of 3rd degree to printout:

In[37]:=

```
(R1,2,3,4.R1,5,6,7.R2,5,8,9.R3,6,8,10.R4,7,9,10 - R4,7,9,10.R3,6,8,10.R2,5,8,9.R1,5,6,7.R1,2,3,4) //
 MatrixForm
```

Out[37]//MatrixForm=

$$\begin{pmatrix} 0 \\ -a_{1,1}\,a_{1,2}\,a_{2,1} \\ -a_{1,3}\,a_{2,1}\,a_{3,1} - a_{1,1}\,(a_{1,2}\,a_{3,1} + a_{1,3}\,a_{2,1}\,a_{3,2}) \\ -a_{1,4}\,a_{3,1}\,a_{4,1} - a_{2,1}\,(a_{1,3}\,a_{4,1} + a_{1,4}\,a_{3,1}\,a_{4,3}) - a_{1,1}\,(a_{1,2}\,a_{4,1} + a_{1,4}\,a_{3,1}\,a_{4,2} + a_{2,1}\,(a_{1,3}\,a_{4,} \\ a_{2,1} - a_{2,1}^2 - a_{1,1}\,a_{2,1}\,a_{2,2} \\ a_{3,1} - a_{2,1}\,a_{3,1} - a_{2,1}\,a_{2,3}\,a_{3,1} - a_{1,1}\,(a_{2,2}\,a_{3,1} + a_{2,1}\,a_{2,3}\,a_{3,2}) \\ a_{4,1} - a_{2,1}\,a_{4,1} - a_{2,4}\,a_{3,1}\,a_{4,1} - a_{2,1}\,(a_{2,3}\,a_{4,1} + a_{2,4}\,a_{3,1}\,a_{4,3}) - a_{1,1}\,(a_{2,2}\,a_{4,1} + a_{2,4}\,a_{3,1}\,a_{4,2} + a_{2,1}\,(\\ -a_{3,1}^2 - a_{2,1}\,a_{3,1}\,a_{3,3} - a_{1,1}\,(a_{3,1}\,a_{3,2} + a_{2,1}\,a_{3,2}\,a_{3,3}) \\ -a_{3,1}\,a_{4,1} - a_{3,1}\,a_{3,4}\,a_{4,1} - a_{2,1}\,(a_{3,3}\,a_{4,1} + a_{3,1}\,a_{3,4}\,a_{4,3}) - a_{1,1}\,(a_{3,2}\,a_{4,1} + a_{3,1}\,a_{3,4}\,a_{4,2} + a_{2,1}\,(a_{3} \\ -a_{4,1}^2 - a_{3,1}\,a_{4,1}\,a_{4,4} - a_{2,1}\,(a_{4,1}\,a_{4,3} + a_{3,1}\,a_{4,3}\,a_{4,4}) - a_{1,1}\,(a_{4,1}\,a_{4,2} + a_{3,1}\,a_{4,2}\,a_{4,4} + a_{2,1}\,(a_{4,2} \end{pmatrix}$$

In[38]:=

```
sol = Solve[
  R1,2,3,4.R1,5,6,7.R2,5,8,9.R3,6,8,10.R4,7,9,10 - R4,7,9,10.R3,6,8,10.R2,5,8,9.R1,5,6,7.R1,2,3,4 ==
   ConstantArray[0, {10, 10}], Flatten[A]];
```

In[39]:=

```
sol2 = DeleteDuplicates[sol];
Length[sol2]
```

Out[40]= 793

Note the variables for the solutions:

In[41]:=

```
Flatten[A]
```

Out[41]= $\{a_{1,1}, a_{1,2}, a_{1,3}, a_{1,4}, a_{2,1}, a_{2,2}, a_{2,3}, a_{2,4}, a_{3,1}, a_{3,2}, a_{3,3}, a_{3,4}, a_{4,1}, a_{4,2}, a_{4,3}, a_{4,4}\}$

I see none of thes solutions or even hint from Hietaina paper:

In[43]:=

```
Table[ A /. sol2[[i]] // MatrixForm , {i, 1, Length[sol2]}]
```

$$\left\{\begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ \frac{-a_{3,2}^2+a_{3,1}\,a_{4,2}-a_{3,1}\,a_{3,2}\,a_{4,2}+a_{3,2}^2\,a_{4,3}}{a_{3,2}^2\,(-1+a_{4,3})} & \frac{a_{4,2}-a_{3,2}\,a_{4,2}}{a_{3,2}\,(-1+a_{4,3})} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,2}\,(-1+a_{4,3})}{a_{4,2}} & 0 \\ \frac{a_{3,1}\,a_{4,2}}{a_{3,2}} & a_{4,2} & a_{4,3} & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix},\right.$$

$$\begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ \frac{-a_{3,1}\,a_{4,2}+a_{3,2}\,a_{4,3}}{a_{3,2}\,a_{4,3}} & -\frac{a_{4,2}}{a_{4,3}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{(-1+a_{3,2})\,a_{4,3}}{a_{4,2}} & 0 \\ \frac{a_{3,1}\,a_{4,2}}{a_{3,2}} & a_{4,2} & a_{4,3} & \frac{a_{4,2}-a_{4,2}\,a_{4,3}}{(-1+a_{3,2})\,a_{4,3}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{a_{3,2}-a_{3,1}\,a_{4,2}-a_{3,2}\,a_{4,3}}{(-1+a_{3,2})\,a_{4,2}} & 0 & 0 & 0 \\ -\frac{a_{3,1}\,a_{4,2}}{a_{3,2}\,(-1+a_{4,3})} & \frac{a_{4,2}-a_{3,2}\,a_{4,2}}{a_{3,2}\,(-1+a_{4,3})} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,2}\,(-1+a_{4,3})}{a_{4,2}} & 0 \\ \frac{a_{3,1}\,a_{4,2}}{a_{3,2}} & a_{4,2} & a_{4,3} & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{a_{3,1}-a_{2,1}\,a_{3,1}}{a_{2,1}\,(-1+a_{3,2})} & 0 & 0 & 0 \\ a_{2,1} & \frac{a_{2,1}\,(-1+a_{3,2})}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & -\frac{a_{3,1}}{a_{2,1}} & 0 \\ \frac{a_{3,1}\,a_{4,2}}{a_{3,2}} & a_{4,2} & \frac{a_{2,1}\,a_{3,2}-a_{3,1}\,a_{4,2}}{a_{2,1}\,a_{3,2}} & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix},\ \begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ a_{2,1} & \frac{(-1+a_{2,1})\,a_{3,2}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,1}-a_{3,1}\,a_{3,2}}{(-1+a_{2,1})\,a_{3,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ a_{2,1} & \frac{(-1+a_{2,1})\,a_{3,2}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,1}-a_{3,1}\,a_{3,2}}{(-1+a_{2,1})\,a_{3,2}} & a_{3,4} \\ 0 & 0 & 0 & \frac{(-1+a_{2,1})\,a_{3,2}\,(-1+a_{3,4})}{a_{3,1}\,(-1+a_{3,2})} \end{pmatrix},\ \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},\ \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},\ \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ a_{2,1} & \frac{1-a_{2,1}}{a_{1,1}} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & a_{1,2} & 0 & 0 \\ 0 & \frac{1-a_{1,2}}{a_{1,1}} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ a_{2,1} & \frac{1-a_{2,1}}{a_{1,1}} & 0 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & a_{1,2} & 0 & 0 \\ 0 & \frac{1-a_{1,2}}{a_{1,1}} & 0 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{2,1})\,a_{3,4}}{a_{2,4}} & 0 & 0 & 0 \\ a_{2,1} & -\frac{a_{2,4}}{a_{3,4}} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{(-1+a_{2,3})\,a_{3,4}}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & \frac{a_{2,4}-a_{2,4}\,a_{3,4}}{(-1+a_{2,3})\,a_{3,4}} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{a_{4,2}-a_{3,2}\,a_{4,2}}{a_{3,2}\,(-1+a_{4,3})} & 0 & 0 \\ 0 & a_{3,2} & \frac{a_{3,2}\,(-1+a_{4,3})}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & -\frac{a_{4,2}}{a_{4,3}} & 0 & 0 \\ 0 & a_{3,2} & \frac{(-1+a_{3,2})\,a_{4,3}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & \frac{a_{4,2}-a_{4,2}\,a_{4,3}}{(-1+a_{3,2})\,a_{4,3}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{(-1+a_{1,2})\,a_{3,2}\,(-1+a_{4,3})}{(-1+a_{3,2})\,a_{4,2}} & a_{1,2} & 0 & 0 \\ 0 & \frac{a_{4,2}-a_{3,2}\,a_{4,2}}{a_{3,2}\,(-1+a_{4,3})} & 0 & 0 \\ 0 & a_{3,2} & \frac{a_{3,2}\,(-1+a_{4,3})}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} \frac{a_{3,1}-a_{2,1}\,a_{3,1}}{a_{2,1}\,(-1+a_{3,2})} & 0 & 0 & 0 \\ a_{2,1} & \frac{a_{2,1}\,(-1+a_{3,2})}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & -\frac{a_{3,1}}{a_{2,1}} & a_{3,4} \\ 0 & 0 & 0 & \frac{a_{2,1}\,(-1+a_{3,4})}{a_{3,1}} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ a_{2,1} & \frac{(-1+a_{2,1})\,a_{3,2}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,1}-a_{3,1}\,a_{3,2}}{(-1+a_{2,1})\,a_{3,2}} & 0 \\ \frac{a_{3,1}\,a_{4,2}}{a_{3,2}} & a_{4,2} & \frac{-a_{3,2}^2+a_{2,1}\,a_{3,2}^2+a_{3,1}\,a_{4,2}-a_{3,1}\,a_{3,2}\,a_{4,2}}{(-1+a_{2,1})\,a_{3,2}^2} & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{a_{3,1}-a_{2,1}\,a_{3,1}}{a_{2,1}\,(-1+a_{3,2})} & 0 & 0 & 0 \\ a_{2,1} & \frac{a_{2,1}\,(-1+a_{3,2})}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & -\frac{a_{3,1}}{a_{2,1}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} \frac{(-1+a_{1,2})\,a_{4,3}}{a_{4,2}} & a_{1,2} & 0 & 0 \\ 0 & -\frac{a_{4,2}}{a_{4,3}} & 0 & 0 \\ 0 & a_{3,2} & \frac{(-1+a_{3,2})\,a_{4,3}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & \frac{a_{4,2}-a_{4,2}\,a_{4,3}}{(-1+a_{3,2})\,a_{4,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} \frac{a_{1,3}-a_{1,2}\,a_{1,3}}{a_{1,2}\,(-1+a_{2,3})} & a_{1,2} & a_{1,3} & 0 \\ 0 & \frac{a_{1,2}\,(-1+a_{2,3})}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & -\frac{a_{1,3}}{a_{1,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & a_{1,2} & a_{1,3} & 0 \\ 0 & \frac{(-1+a_{1,2})\,a_{2,3}}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & \frac{a_{1,3}-a_{1,3}\,a_{2,3}}{(-1+a_{1,2})\,a_{2,3}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{2,1})\,a_{3,3}}{-1+a_{2,3}} & 0 & 0 & 0 \\ a_{2,1} & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{2,1})\,a_{2,3}\,(-1+a_{3,4})}{(-1+a_{2,3})\,a_{2,4}} & 0 & 0 & 0 \\ a_{2,1} & \frac{a_{2,4}-a_{2,3}\,a_{2,4}}{a_{2,3}\,(-1+a_{3,4})} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{a_{2,3}\,(-1+a_{3,4})}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{(-1+a_{1,2})\,a_{3,3}}{-1+a_{3,2}} & a_{1,2} & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{a_{1,3}-a_{1,2}\,a_{1,3}}{a_{1,2}\,(-1+a_{2,3})} & a_{1,2} & a_{1,3} & 0 \\ 0 & \frac{a_{1,2}\,(-1+a_{2,3})}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & -\frac{a_{1,3}}{a_{1,2}} & 0 \\ 0 & 0 & a_{4,3} & \frac{a_{1,2}\,(-1+a_{4,3})}{a_{1,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & -\frac{a_{2,4}}{a_{3,4}} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{(-1+a_{2,3})\,a_{3,4}}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & \frac{a_{2,4}-a_{2,4}\,a_{3,4}}{(-1+a_{2,3})\,a_{3,4}} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{a_{2,4}-a_{2,3}\,a_{2,4}}{a_{2,3}\,(-1+a_{3,4})} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{a_{2,3}\,(-1+a_{3,4})}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix}, \begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & a_{1,2} & a_{1,3} & 0 \\ 0 & \frac{(-1+a_{1,2})\,a_{2,3}}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & \frac{a_{1,3}-a_{1,3}\,a_{2,3}}{(-1+a_{1,2})\,a_{2,3}} & 0 \\ 0 & 0 & a_{4,3} & \frac{(-1+a_{1,2})\,a_{2,3}\,(-1+a_{4,3})}{a_{1,3}\,(-1+a_{2,3})} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & \frac{-a_{1,3}\,a_{2,4}+a_{2,3}\,a_{3,4}}{a_{2,3}\,a_{3,4}} & a_{1,3} & \frac{a_{1,3}\,a_{2,4}}{a_{2,3}} \\ 0 & -\frac{a_{2,4}}{a_{3,4}} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{(-1+a_{2,3})\,a_{3,4}}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & \frac{a_{2,4}-a_{2,4}\,a_{3,4}}{(-1+a_{2,3})\,a_{3,4}} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & \frac{-a_{2,3}^2+a_{1,3}\,a_{2,4}-a_{1,3}\,a_{2,3}\,a_{2,4}+a_{2,3}^2\,a_{3,4}}{a_{2,3}^2\,(-1+a_{3,4})} & a_{1,3} & \frac{a_{1,3}\,a_{2,4}}{a_{2,3}} \\ 0 & \frac{a_{2,4}-a_{2,3}\,a_{2,4}}{a_{2,3}\,(-1+a_{3,4})} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{a_{2,3}\,(-1+a_{3,4})}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{a_{1,3}-a_{1,2}\,a_{1,3}}{a_{1,2}\,(-1+a_{2,3})} & a_{1,2} & a_{1,3} & \frac{a_{1,3}\,a_{2,4}}{a_{2,3}} \\ 0 & \frac{a_{1,2}\,(-1+a_{2,3})}{a_{1,3}} & a_{2,3} & a_{2,4} \\ 0 & 0 & -\frac{a_{1,3}}{a_{1,2}} & \frac{a_{1,2}\,a_{2,3}-a_{1,3}\,a_{2,4}}{a_{1,2}\,a_{2,3}} \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{a_{2,3}-a_{1,3}\,a_{2,4}-a_{2,3}\,a_{3,4}}{(-1+a_{2,3})\,a_{2,4}} & -\frac{a_{1,3}\,a_{2,4}}{a_{2,3}\,(-1+a_{3,4})} & a_{1,3} & \frac{a_{1,3}\,a_{2,4}}{a_{2,3}} \\ 0 & \frac{a_{2,4}-a_{2,3}\,a_{2,4}}{a_{2,3}\,(-1+a_{3,4})} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{a_{2,3}\,(-1+a_{3,4})}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & a_{1,2} & a_{1,3} & \frac{a_{1,3}\,a_{2,4}}{a_{2,3}} \\ 0 & \frac{(-1+a_{1,2})\,a_{2,3}}{a_{1,3}} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{a_{1,3}-a_{1,3}\,a_{2,3}}{(-1+a_{1,2})\,a_{2,3}} & \frac{-a_{2,3}^2+a_{1,2}\,a_{2,3}^2+a_{1,3}\,a_{2,4}-a_{1,3}\,a_{2,3}\,a_{2,4}}{(-1+a_{1,2})\,a_{2,3}^2} \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1-a_{3,1}\,a_{4,2} & -a_{4,2} & 0 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ a_{3,1}\,a_{4,2} & a_{4,2} & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ a_{2,1} & \frac{-1+a_{2,1}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ a_{3,1}\,a_{4,2} & a_{4,2} & 1 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ \frac{a_{3,2}^2-a_{3,1}\,a_{4,2}+a_{3,1}\,a_{3,2}\,a_{4,2}}{a_{3,2}^2} & \frac{(-1+a_{3,2})\,a_{4,2}}{a_{3,2}} & 0 & 0 \\ a_{3,1} & a_{3,2} & -\frac{a_{3,2}}{a_{4,2}} & 0 \\ \frac{a_{3,1}\,a_{4,2}}{a_{3,2}} & a_{4,2} & 0 & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ 0 & -\frac{a_{3,2}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,1}\,(-1+a_{3,2})}{a_{3,2}} & 0 \\ \frac{a_{3,1}\,a_{4,2}}{a_{3,2}} & a_{4,2} & \frac{a_{3,1}\,a_{4,2}}{a_{3,2}} & \frac{a_{3,2}-a_{3,1}\,a_{4,2}}{a_{3,1}\,(-1+a_{3,2})} \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ 0 & -\frac{a_{3,2}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,1}\,(-1+a_{3,2})}{a_{3,2}} & 0 \\ \frac{a_{3,1}\,a_{4,2}}{a_{3,2}} & a_{4,2} & \frac{a_{3,2}^2-a_{3,1}\,a_{4,2}+a_{3,1}\,a_{3,2}\,a_{4,2}}{a_{3,2}^2} & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ 0 & -\frac{a_{3,2}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,1}\,(-1+a_{3,2})}{a_{3,2}} & a_{3,4} \\ 0 & 0 & 0 & \frac{a_{3,2}-a_{3,2}\,a_{3,4}}{a_{3,1}\,(-1+a_{3,2})} \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ a_{2,1} & \frac{(-1+a_{2,1})\,a_{3,2}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,1}-a_{3,1}\,a_{3,2}}{(-1+a_{2,1})\,a_{3,2}} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ a_{2,1} & \frac{(-1+a_{2,1})\,a_{3,2}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,1}-a_{3,1}\,a_{3,2}}{(-1+a_{2,1})\,a_{3,2}} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} \frac{a_{3,2}-a_{3,1}\,a_{4,2}}{(-1+a_{3,2})\,a_{4,2}} & 0 & 0 & 0 \\ \frac{a_{3,1}\,a_{4,2}}{a_{3,2}} & \frac{(-1+a_{3,2})\,a_{4,2}}{a_{3,2}} & 0 & 0 \\ a_{3,1} & a_{3,2} & -\frac{a_{3,2}}{a_{4,2}} & 0 \\ \frac{a_{3,1}\,a_{4,2}}{a_{3,2}} & a_{4,2} & 0 & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & -\frac{a_{4,2}}{a_{4,3}} & 0 & 0 \\ 0 & a_{3,2} & \frac{(-1+a_{3,2})\,a_{4,3}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & \frac{a_{4,2}-a_{4,2}\,a_{4,3}}{(-1+a_{3,2})\,a_{4,3}} \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{2,1})\,a_{4,3}}{a_{4,2}} & 0 & 0 & 0 \\ a_{2,1} & -\frac{a_{4,2}}{a_{4,3}} & 0 & 0 \\ 0 & 0 & -\frac{a_{4,3}}{a_{4,2}} & 0 \\ a_{4,3}-a_{2,1}\,a_{4,3} & a_{4,2} & a_{4,3} & \frac{a_{4,2}\,(-1+a_{4,3})}{a_{4,3}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{(-1+a_{1,2})\,a_{4,3}}{a_{4,2}} & a_{1,2} & 0 & 0 \\ 0 & -\frac{a_{4,2}}{a_{4,3}} & 0 & 0 \\ 0 & 0 & -\frac{a_{4,3}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & \frac{a_{4,2}\,(-1+a_{4,3})}{a_{4,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & 0 \\ a_{3,1}\,a_{4,2} & a_{4,2} & 1-a_{3,1}\,a_{4,2} & -a_{4,2} \end{pmatrix},$$

$$\begin{pmatrix} \frac{a_{3,2}-a_{3,2}^2-a_{3,1}\,a_{4,2}}{(-1+a_{3,2})\,a_{4,2}} & 0 & 0 & 0 \\ -\frac{a_{3,1}\,a_{4,2}}{(-1+a_{3,2})\,a_{3,2}} & -\frac{a_{4,2}}{a_{3,2}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{(-1+a_{3,2})\,a_{3,2}}{a_{4,2}} & 0 \\ \frac{a_{3,1}\,a_{4,2}}{a_{3,2}} & a_{4,2} & a_{3,2} & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ a_{3,2} & \frac{(-1+a_{3,2})\,a_{3,2}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & -\frac{a_{3,1}}{a_{3,2}} & 0 \\ \frac{a_{3,1}\,a_{4,2}}{a_{3,2}} & a_{4,2} & -\frac{a_{3,1}\,a_{4,2}}{(-1+a_{3,2})\,a_{3,2}} & \frac{a_{3,2}-a_{3,2}^2-a_{3,1}\,a_{4,2}}{a_{3,1}\,(-1+a_{3,2})} \end{pmatrix},$$

$$\begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ a_{2,1} & \frac{-1+a_{2,1}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ a_{2,1} & \frac{(-1+a_{2,1})\,a_{3,2}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,1}-a_{3,1}\,a_{3,2}}{(-1+a_{2,1})\,a_{3,2}} & 0 \\ 0 & 0 & 0 & \frac{a_{3,2}-a_{2,1}\,a_{3,2}}{a_{3,1}\,(-1+a_{3,2})} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ 0 & -\frac{a_{3,2}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,1}(-1+a_{3,2})}{a_{3,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & a_{3,4} \\ 0 & 0 & 0 & \frac{a_{2,2}(-1+a_{3,4})}{-1+a_{3,2}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & a_{3,4} \\ 0 & 0 & 0 & \frac{a_{2,2}(-1+a_{3,4})}{-1+a_{3,2}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 0 & \frac{1}{a_{2,2}} & a_{3,4} \\ 0 & 0 & 0 & a_{2,2}-a_{2,2}\,a_{3,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 0 & \frac{1}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & \frac{1}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & \frac{1}{a_{2,2}} & a_{3,4} \\ 0 & 0 & 0 & a_{2,2}-a_{2,2}\,a_{3,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & \frac{1}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ a_{2,1} & \frac{-1+a_{2,1}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 1 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,2}}{-1+a_{2,3}} \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & -\frac{a_{4,2}}{a_{4,3}} & 0 & 0 \\ 0 & a_{3,2} & \frac{(-1+a_{3,2})\,a_{4,3}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & \frac{a_{4,2}-a_{4,2}\,a_{4,3}}{(-1+a_{3,2})\,a_{4,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & -\frac{a_{4,2}}{a_{4,3}} & 0 & 0 \\ 0 & 0 & -\frac{a_{4,3}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & \frac{a_{4,2}\,(-1+a_{4,3})}{a_{4,3}} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ a_{2,1} & \frac{1-a_{2,1}}{a_{1,1}} & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & a_{1,2} & 0 & 0 \\ 0 & \frac{1-a_{1,2}}{a_{1,1}} & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ a_{2,1} & \frac{1-a_{2,1}}{a_{1,1}} & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & a_{1,2} & 0 & 0 \\ 0 & \frac{1-a_{1,2}}{a_{1,1}} & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix},$$

$$\begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} \frac{-1+a_{2,1}}{a_{2,4}} & 0 & 0 & 0 \\ a_{2,1} & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & a_{3,4} \\ 0 & 0 & 0 & \frac{-1+a_{3,4}}{a_{3,1}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{a_{3,1}-a_{2,1}\,a_{3,1}}{a_{2,1}\,(-1+a_{3,2})} & 0 & 0 & 0 \\ a_{2,1} & \frac{a_{2,1}\,(-1+a_{3,2})}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & -\frac{a_{3,1}}{a_{2,1}} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} \frac{a_{3,1}-a_{2,1}\,a_{3,1}}{a_{2,1}\,(-1+a_{3,2})} & 0 & 0 & 0 \\ a_{2,1} & \frac{a_{2,1}\,(-1+a_{3,2})}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & -\frac{a_{3,1}}{a_{2,1}} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} \frac{a_{3,1}-a_{2,1}\,a_{3,1}}{a_{2,1}\,(-1+a_{3,2})} & 0 & 0 & 0 \\ a_{2,1} & \frac{a_{2,1}\,(-1+a_{3,2})}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & -\frac{a_{3,1}}{a_{2,1}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,1}}{a_{3,1}} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} \frac{(-1+a_{2,1})\,a_{3,1}}{a_{2,1}} & 0 & 0 & 0 \\ a_{2,1} & -\frac{a_{2,1}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 0 & -\frac{a_{3,1}}{a_{2,1}} & 0 \\ a_{2,1}-a_{2,1}\,a_{4,3} & 0 & a_{4,3} & \frac{a_{2,1}\,(-1+a_{4,3})}{a_{3,1}} \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{2,1})\,a_{3,1}}{a_{2,1}} & 0 & 0 & 0 \\ a_{2,1} & -\frac{a_{2,1}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 0 & -\frac{a_{3,1}}{a_{2,1}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & -\frac{a_{2,4}}{a_{3,4}} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{(-1+a_{2,3})\,a_{3,4}}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & \frac{a_{2,4}-a_{2,4}\,a_{3,4}}{(-1+a_{2,3})\,a_{3,4}} \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,4}}{a_{2,4}} & 0 & 0 & 0 \\ 0 & -\frac{a_{2,4}}{a_{3,4}} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{(-1+a_{2,3})\,a_{3,4}}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & \frac{a_{2,4}-a_{2,4}\,a_{3,4}}{(-1+a_{2,3})\,a_{3,4}} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & \frac{a_{2,4}-a_{2,3}\,a_{2,4}}{a_{2,3}\,(-1+a_{3,4})} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{a_{2,3}\,(-1+a_{3,4})}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & -\frac{a_{2,4}}{a_{3,4}} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{(-1+a_{2,3})\,a_{3,4}}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & \frac{a_{2,4}-a_{2,4}\,a_{3,4}}{(-1+a_{2,3})\,a_{3,4}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{a_{2,3}-a_{2,1}\,a_{2,3}}{(-1+a_{2,3})\,a_{2,4}} & 0 & 0 & 0 \\ a_{2,1} & \frac{(-1+a_{2,3})\,a_{2,4}}{a_{2,3}} & a_{2,3} & a_{2,4} \\ 0 & 0 & -\frac{a_{2,3}}{a_{2,4}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & \frac{a_{2,4}-a_{2,3}\,a_{2,4}}{a_{2,3}\,(-1+a_{3,4})} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{a_{2,3}\,(-1+a_{3,4})}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{(-1+a_{2,1})\,a_{3,4}}{a_{2,4}} & 0 & 0 & 0 \\ a_{2,1} & -\frac{a_{2,4}}{a_{3,4}} & 0 & a_{2,4} \\ 0 & 0 & -\frac{a_{3,4}}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & \frac{a_{2,4}\,(-1+a_{3,4})}{a_{3,4}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & -\frac{a_{2,4}}{a_{3,4}} & 0 & a_{2,4} \\ 0 & 0 & -\frac{a_{3,4}}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & \frac{a_{2,4}\,(-1+a_{3,4})}{a_{3,4}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{(-1+a_{1,2})\,a_{3,4}}{a_{2,4}} & a_{1,2} & 0 & a_{3,4}-a_{1,2}\,a_{3,4} \\ 0 & -\frac{a_{2,4}}{a_{3,4}} & 0 & a_{2,4} \\ 0 & 0 & -\frac{a_{3,4}}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & \frac{a_{2,4}\,(-1+a_{3,4})}{a_{3,4}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix},$$

$$\begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & \frac{a_{4,2}-a_{3,2}\,a_{4,2}}{a_{3,2}\,(-1+a_{4,3})} & 0 & 0 \\ 0 & a_{3,2} & \frac{a_{3,2}\,(-1+a_{4,3})}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix}, \begin{pmatrix} \frac{a_{3,2}-a_{3,2}\,a_{4,3}}{(-1+a_{3,2})\,a_{4,2}} & 0 & 0 & 0 \\ 0 & \frac{a_{4,2}-a_{3,2}\,a_{4,2}}{a_{3,2}\,(-1+a_{4,3})} & 0 & 0 \\ 0 & a_{3,2} & \frac{a_{3,2}\,(-1+a_{4,3})}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{(-1+a_{3,2})\,a_{4,2}}{a_{3,2}} & 0 & 0 \\ 0 & a_{3,2} & -\frac{a_{3,2}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & 0 & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix}, \begin{pmatrix} \frac{a_{3,2}-a_{1,2}\,a_{3,2}}{(-1+a_{3,2})\,a_{4,2}} & a_{1,2} & 0 & 0 \\ 0 & \frac{(-1+a_{3,2})\,a_{4,2}}{a_{3,2}} & 0 & 0 \\ 0 & a_{3,2} & -\frac{a_{3,2}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & 0 & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & \frac{-1+a_{4,3}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & -a_{4,2} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & \frac{-1+a_{4,3}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & -a_{4,2} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & -a_{4,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} \frac{(-1+a_{1,2})\,a_{3,3}}{-1+a_{3,2}} & a_{1,2} & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{1,2})\,a_{3,3}}{-1+a_{3,2}} & a_{1,2} & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{1}{a_{3,3}} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{3,3}-a_{1,2}\,a_{3,3} & a_{1,2} & 0 & 0 \\ 0 & \frac{1}{a_{3,3}} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{1}{a_{3,3}} & 0 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{1}{a_{3,3}} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{3,3} - a_{1,2}\, a_{3,3} & a_{1,2} & 0 & 0 \\ 0 & \frac{1}{a_{3,3}} & 0 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{2,1})\, a_{3,1}}{a_{2,1}} & 0 & 0 & 0 \\ a_{2,1} & -\frac{a_{2,1}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 0 & -\frac{a_{3,1}}{a_{2,1}} & a_{3,4} \\ 0 & 0 & 0 & \frac{a_{2,1}\,(-1+a_{3,4})}{a_{3,1}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{a_{3,1}-a_{2,1}\, a_{3,1}}{a_{2,1}\,(-1+a_{3,2})} & 0 & 0 & 0 \\ a_{2,1} & \frac{a_{2,1}\,(-1+a_{3,2})}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & -\frac{a_{3,1}}{a_{2,1}} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} -a_{1,3} & a_{1,2} & a_{1,3} & a_{1,3}\, a_{2,4} \\ 0 & \frac{-1+a_{1,2}}{a_{1,3}} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & a_{1,3}\, a_{2,4} \\ 0 & 0 & 1 & a_{2,4} \\ 0 & 0 & \frac{-1+a_{3,4}}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & \frac{-1+a_{4,3}}{a_{4,2}} & 0 \\ a_{3,1}\, a_{4,2} & a_{4,2} & a_{4,3} & -a_{4,2} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & \frac{a_{4,2}-a_{3,2}\, a_{4,2}}{a_{3,2}\,(-1+a_{4,3})} & 0 & 0 \\ 0 & a_{3,2} & \frac{a_{3,2}\,(-1+a_{4,3})}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & \frac{a_{4,2}-a_{3,2}\, a_{4,2}}{a_{3,2}\,(-1+a_{4,3})} & 0 & 0 \\ 0 & a_{3,2} & \frac{a_{3,2}\,(-1+a_{4,3})}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ a_{2,1} & \frac{(-1+a_{2,1})\, a_{3,2}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,1}-a_{3,1}\, a_{3,2}}{(-1+a_{2,1})\, a_{3,2}} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{-1+a_{1,2}}{a_{4,2}} & a_{1,2} & 0 & 0 \\ 0 & -a_{4,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{4,3}}{a_{4,2}} & 0 & 0 & 0 \\ 0 & -\frac{a_{4,2}}{a_{4,3}} & 0 & 0 \\ 0 & a_{3,2} & \frac{(-1+a_{3,2})\,a_{4,3}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & \frac{a_{4,2}-a_{4,2}\,a_{4,3}}{(-1+a_{3,2})\,a_{4,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,2}}{-1+a_{3,2}} \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} -a_{1,3} & a_{1,2} & a_{1,3} & 0 \\ 0 & \frac{-1+a_{1,2}}{a_{1,3}} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & a_{1,2} & a_{1,3} & 0 \\ 0 & \frac{(-1+a_{1,2})\,a_{2,3}}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & \frac{a_{1,3}-a_{1,3}\,a_{2,3}}{(-1+a_{1,2})\,a_{2,3}} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} \frac{(-1+a_{1,2})\,a_{1,3}}{a_{1,2}} & a_{1,2} & a_{1,3} & 0 \\ 0 & -\frac{a_{1,2}}{a_{1,3}} & 0 & 0 \\ 0 & 0 & -\frac{a_{1,3}}{a_{1,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & -a_{1,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & 0 & a_{1,3} & 0 \\ 0 & -\frac{a_{2,3}}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & \frac{a_{1,3}\,(-1+a_{2,3})}{a_{2,3}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & a_{1,2} & a_{1,3} & 0 \\ 0 & \frac{(-1+a_{1,2})\,a_{2,3}}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & \frac{a_{1,3}-a_{1,3}\,a_{2,3}}{(-1+a_{1,2})\,a_{2,3}} & 0 \\ 0 & 0 & 0 & \frac{a_{2,3}-a_{1,2}\,a_{2,3}}{a_{1,3}\,(-1+a_{2,3})} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & -a_{1,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{-1+a_{4,3}}{a_{1,3}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{a_{1,3}-a_{1,2}\,a_{1,3}}{a_{1,2}\,(-1+a_{2,3})} & a_{1,2} & a_{1,3} & 0 \\ 0 & \frac{a_{1,2}\,(-1+a_{2,3})}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & -\frac{a_{1,3}}{a_{1,2}} & 0 \\ 0 & 0 & 0 & -\frac{a_{1,2}}{a_{1,3}} \end{pmatrix}, \begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & a_{1,2} & a_{1,3} & 0 \\ 0 & \frac{(-1+a_{1,2})\,a_{2,3}}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & \frac{a_{1,3}-a_{1,3}\,a_{2,3}}{(-1+a_{1,2})\,a_{2,3}} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & \frac{1-a_{4,3}}{a_{4,4}} & 0 \\ 0 & 0 & a_{4,3} & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & \frac{1-a_{3,4}}{a_{4,4}} & a_{3,4} \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{1-a_{4,3}}{a_{4,4}} & 0 \\ 0 & 0 & a_{4,3} & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & \frac{1-a_{3,4}}{a_{4,4}} & a_{3,4} \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{3,3}-a_{2,1}\,a_{3,3} & 0 & 0 & 0 \\ a_{2,1} & \frac{1}{a_{3,3}} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{3,3}-a_{2,1}\,a_{3,3} & 0 & 0 & 0 \\ a_{2,1} & \frac{1}{a_{3,3}} & 0 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & a_{2,4} \\ 0 & 0 & \frac{-1+a_{3,4}}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,3}}{-1+a_{2,3}} & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{2,1})\,a_{3,3}}{-1+a_{2,3}} & 0 & 0 & 0 \\ a_{2,1} & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{3,3}}{-1+a_{2,3}} & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{2,1})\,a_{3,3}}{-1+a_{2,3}} & 0 & 0 & 0 \\ a_{2,1} & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & \frac{a_{2,4}-a_{2,3}\,a_{2,4}}{a_{2,3}\,(-1+a_{3,4})} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{a_{2,3}\,(-1+a_{3,4})}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{(-1+a_{2,3})\,a_{2,4}}{a_{2,3}} & a_{2,3} & a_{2,4} \\ 0 & 0 & -\frac{a_{2,3}}{a_{2,4}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{3,3}}{-1+a_{3,2}} & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{1,2})\,a_{3,3}}{-1+a_{3,2}} & a_{1,2} & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{1,2})\,a_{3,3}}{-1+a_{3,2}} & a_{1,2} & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} a_{3,3}-a_{1,2}\,a_{3,3} & a_{1,2} & 0 & 0 \\ 0 & \frac{1}{a_{3,3}} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} -a_{1,3} & a_{1,2} & a_{1,3} & 0 \\ 0 & \frac{-1+a_{1,2}}{a_{1,3}} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & 0 & a_{1,3} & 0 \\ 0 & -\frac{a_{2,3}}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & \frac{a_{1,3}\,(-1+a_{2,3})}{a_{2,3}} & 0 \\ 0 & 0 & a_{4,3} & \frac{a_{2,3}-a_{2,3}\,a_{4,3}}{a_{1,3}\,(-1+a_{2,3})} \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{1,2})\,a_{1,3}}{a_{1,2}} & a_{1,2} & a_{1,3} & 0 \\ 0 & -\frac{a_{1,2}}{a_{1,3}} & 0 & 0 \\ 0 & 0 & -\frac{a_{1,3}}{a_{1,2}} & 0 \\ 0 & 0 & a_{4,3} & \frac{a_{1,2}\,(-1+a_{4,3})}{a_{1,3}} \end{pmatrix},$$

$$\begin{pmatrix} -a_{1,3} & 1-a_{1,3}\,a_{2,4} & a_{1,3} & a_{1,3}\,a_{2,4} \\ 0 & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,3}}{-1+a_{3,2}} & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{3,3}-a_{2,1}\,a_{3,3} & 0 & 0 & 0 \\ a_{2,1} & \frac{1}{a_{3,3}} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{2,1})\,a_{3,3}}{-1+a_{2,3}} & 0 & 0 & 0 \\ a_{2,1} & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} \frac{a_{2,3}-a_{2,3}\,a_{3,4}}{(-1+a_{2,3})\,a_{2,4}} & 0 & 0 & 0 \\ 0 & \frac{a_{2,4}-a_{2,3}\,a_{2,4}}{a_{2,3}\,(-1+a_{3,4})} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{a_{2,3}\,(-1+a_{3,4})}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & a_{1,3} & a_{1,3}\,a_{2,4} \\ 0 & 0 & 1 & a_{2,4} \\ 0 & 0 & -a_{1,3} & 1-a_{1,3}\,a_{2,4} \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix},$$

$$\begin{pmatrix} \frac{(-1+a_{1,2})\,a_{1,3}}{a_{1,2}} & a_{1,2} & a_{1,3} & a_{1,2}-a_{1,2}\,a_{3,4} \\ 0 & -\frac{a_{1,2}}{a_{1,3}} & 0 & 0 \\ 0 & 0 & -\frac{a_{1,3}}{a_{1,2}} & a_{3,4} \\ 0 & 0 & 0 & \frac{a_{1,2}\,(-1+a_{3,4})}{a_{1,3}} \end{pmatrix}, \begin{pmatrix} \frac{a_{1,3}-a_{1,2}\,a_{1,3}}{a_{1,2}\,(-1+a_{2,3})} & a_{1,2} & a_{1,3} & 0 \\ 0 & \frac{a_{1,2}\,(-1+a_{2,3})}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & -\frac{a_{1,3}}{a_{1,2}} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} \frac{a_{1,3}-a_{1,2}\,a_{1,3}}{a_{1,2}\,(-1+a_{2,3})} & a_{1,2} & a_{1,3} & 0 \\ 0 & \frac{a_{1,2}\,(-1+a_{2,3})}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & -\frac{a_{1,3}}{a_{1,2}} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} \frac{a_{1,3}-a_{1,2}\,a_{1,3}}{a_{1,2}\,(-1+a_{2,3})} & a_{1,2} & a_{1,3} & 0 \\ 0 & \frac{a_{1,2}\,(-1+a_{2,3})}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & -\frac{a_{1,3}}{a_{1,2}} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & a_{1,2} & a_{1,3} & 0 \\ 0 & \frac{(-1+a_{1,2})\,a_{2,3}}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & \frac{a_{1,3}-a_{1,3}\,a_{2,3}}{(-1+a_{1,2})\,a_{2,3}} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & \frac{a_{2,3}^2-a_{1,3}\,a_{2,4}+a_{1,3}\,a_{2,3}\,a_{2,4}}{a_{2,3}^2} & a_{1,3} & \frac{a_{1,3}\,a_{2,4}}{a_{2,3}} \\ 0 & \frac{(-1+a_{2,3})\,a_{2,4}}{a_{2,3}} & a_{2,3} & a_{2,4} \\ 0 & 0 & -\frac{a_{2,3}}{a_{2,4}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{a_{2,3}-a_{2,3}^2-a_{1,3}\,a_{2,4}}{(-1+a_{2,3})\,a_{2,4}} & -\frac{a_{1,3}\,a_{2,4}}{(-1+a_{2,3})\,a_{2,3}} & a_{1,3} & \frac{a_{1,3}\,a_{2,4}}{a_{2,3}} \\ 0 & -\frac{a_{2,4}}{a_{2,3}} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{(-1+a_{2,3})\,a_{2,3}}{a_{2,4}} & a_{2,3} \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix}, \begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & 0 & a_{1,3} & \frac{a_{1,3}\,a_{2,4}}{a_{2,3}} \\ 0 & -\frac{a_{2,3}}{a_{1,3}} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{a_{1,3}\,(-1+a_{2,3})}{a_{2,3}} & \frac{a_{1,3}\,a_{2,4}}{a_{2,3}} \\ 0 & 0 & 0 & \frac{a_{2,3}-a_{1,3}\,a_{2,4}}{a_{1,3}\,(-1+a_{2,3})} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & a_{2,3} & a_{1,3} & \frac{a_{1,3}\,a_{2,4}}{a_{2,3}} \\ 0 & \frac{(-1+a_{2,3})\,a_{2,3}}{a_{1,3}} & a_{2,3} & a_{2,4} \\ 0 & 0 & -\frac{a_{1,3}}{a_{2,3}} & -\frac{a_{1,3}\,a_{2,4}}{(-1+a_{2,3})\,a_{2,3}} \\ 0 & 0 & 0 & \frac{a_{2,3}-a_{2,3}^2-a_{1,3}\,a_{2,4}}{a_{1,3}\,(-1+a_{2,3})} \end{pmatrix}, \begin{pmatrix} \frac{a_{2,3}-a_{1,3}\,a_{2,4}}{(-1+a_{2,3})\,a_{2,4}} & \frac{a_{1,3}\,a_{2,4}}{a_{2,3}} & a_{1,3} & \frac{a_{1,3}\,a_{2,4}}{a_{2,3}} \\ 0 & \frac{(-1+a_{2,3})\,a_{2,4}}{a_{2,3}} & a_{2,3} & a_{2,4} \\ 0 & 0 & -\frac{a_{2,3}}{a_{2,4}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & 0 & a_{1,3} & \frac{a_{1,3}\,a_{2,4}}{a_{2,3}} \\ 0 & -\frac{a_{2,3}}{a_{1,3}} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{a_{1,3}\,(-1+a_{2,3})}{a_{2,3}} & \frac{a_{2,3}^2-a_{1,3}\,a_{2,4}+a_{1,3}\,a_{2,3}\,a_{2,4}}{a_{2,3}^2} \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 0 & \frac{1}{a_{2,2}} & 0 \\ 0 & 0 & a_{4,3} & a_{2,2}-a_{2,2}\,a_{4,3} \end{pmatrix},$$

$$\begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & \frac{1}{a_{2,2}} & 0 \\ 0 & 0 & a_{4,3} & a_{2,2}-a_{2,2}\,a_{4,3} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & a_{4,3} & \frac{a_{2,2}\,(-1+a_{4,3})}{-1+a_{2,3}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & a_{4,3} & \frac{a_{2,2}\,(-1+a_{4,3})}{-1+a_{2,3}} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{2,4} \\ 0 & 0 & \frac{-1+a_{3,4}}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{2,1})\,a_{3,3}}{-1+a_{2,3}} & 0 & 0 & 0 \\ a_{2,1} & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1-a_{3,1}\,a_{4,2} & -a_{4,2} & 0 & 0 \\ a_{3,1} & 1 & 0 & 1 \\ a_{3,1}\,a_{4,2} & a_{4,2} & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 0 & -\frac{1}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ a_{3,1}\,a_{4,2} & a_{4,2} & 1 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ a_{3,1}\,a_{4,2} & a_{4,2} & 1 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} \frac{2\,a_{3,1}}{a_{3,1}\,a_{4,2}+\sqrt{a_{3,1}}\,\sqrt{a_{4,2}}\,\sqrt{4+a_{3,1}\,a_{4,2}}} & \frac{2\,\cdots}{} \\ 0 & \\ a_{3,1} & \frac{1}{2}\left(-a_{3,1}\,\cdots\right. \\ \frac{2\,a_{3,1}\,a_{4,2}}{-a_{3,1}\,a_{4,2}-\sqrt{a_{3,1}}\,\sqrt{a_{4,2}}\,\sqrt{4+a_{3,1}\,a_{4,2}}} & \end{pmatrix}$$

$$\begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ a_{2,1} & \frac{-1+a_{2,1}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 0 & -\frac{1}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 1 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ a_{2,1} & \frac{-1+a_{2,1}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ 0 & -\frac{a_{3,2}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,1}\,(-1+a_{3,2})}{a_{3,2}} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ 0 & -\frac{a_{3,2}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,1}\,(-1+a_{3,2})}{a_{3,2}} & 0 \\ 0 & 0 & 0 & \frac{a_{3,2}}{a_{3,1}\,(-1+a_{3,2})} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ 0 & -\frac{a_{3,2}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,1}(-1+a_{3,2})}{a_{3,2}} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ 0 & -\frac{a_{3,2}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,1}(-1+a_{3,2})}{a_{3,2}} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 0 & -\frac{1}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ 1 & \frac{1}{a_{3,1}} & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{4,3}}{a_{4,2}} & 0 & 0 & 0 \\ 0 & -\frac{a_{4,2}}{a_{4,3}} & 0 & 0 \\ 0 & 0 & -\frac{a_{4,3}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & \frac{a_{4,2}(-1+a_{4,3})}{a_{4,3}} \end{pmatrix}, \begin{pmatrix} -\frac{a_{4,3}}{a_{4,2}} & 0 & 0 & 0 \\ 0 & -\frac{a_{4,2}}{a_{4,3}} & 0 & 0 \\ 0 & 0 & -\frac{a_{4,3}}{a_{4,2}} & 0 \\ a_{4,3} & a_{4,2} & a_{4,3} & \frac{a_{4,2}(-1+a_{4,3})}{a_{4,3}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & -a_{4,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{1}{a_{4,2}} & 0 & 0 & 0 \\ 0 & -a_{4,2} & 0 & 0 \\ \frac{1}{a_{4,2}} & 1 & 0 & 0 \\ 1 & a_{4,2} & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 0 & -\frac{1}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{2\,a_{3,1}}{a_{3,1}\,a_{4,2}+\sqrt{a_{3,1}}\,\sqrt{a_{4,2}}\,\sqrt{4+a_{3,1}\,a_{4,2}}} & 0 \\ 0 & \frac{2+a_{3,1}\,a_{4,2}+\sqrt{a_{3,1}}\,\sqrt{a_{4,2}}\,\sqrt{4+a_{3,1}\,a_{4,2}}}{a_{3,1}+\frac{\sqrt{a_{3,1}}\,\sqrt{4+a_{3,1}\,a_{4,2}}}{\sqrt{a_{4,2}}}} \\ a_{3,1} & \frac{1}{2}\left(-a_{3,1}\,a_{4,2}-\sqrt{a_{3,1}}\,\sqrt{a_{4,2}}\,\sqrt{4+a_{3,1}\,a_{4,2}}\right) \\ \frac{2\,a_{3,1}\,a_{4,2}}{-a_{3,1}\,a_{4,2}-\sqrt{a_{3,1}}\,\sqrt{a_{4,2}}\,\sqrt{4+a_{3,1}\,a_{4,2}}} & a_{4,2} \end{pmatrix}$$

$$\begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 0 & \frac{1}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{2,2} \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & \frac{1}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{2,2} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,2}}{-1+a_{2,3}} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & \frac{1}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & -a_{4,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ a_{2,1} & \frac{1-a_{2,1}}{a_{1,1}} & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & a_{1,2} & 0 & 0 \\ 0 & \frac{1-a_{1,2}}{a_{1,1}} & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} -\frac{1}{a_{2,4}} & 0 & 0 & 0 \\ 0 & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} \frac{-1+a_{1,2}}{a_{2,4}} & a_{1,2} & 0 & 0 \\ 0 & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & a_{2,4} \\ 0 & 0 & \frac{-1+a_{3,4}}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix},$$

$$\begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & a_{2,4} \\ a_{3,1} & 1 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{2,1})\,a_{3,1}}{a_{2,1}} & 0 & 0 & 0 \\ a_{2,1} & -\frac{a_{2,1}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 0 & -\frac{a_{3,1}}{a_{2,1}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,1}}{a_{3,1}} \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{2,1})\,a_{3,1}}{a_{2,1}} & 0 & 0 & 0 \\ a_{2,1} & -\frac{a_{2,1}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 0 & -\frac{a_{3,1}}{a_{2,1}} & 0 \\ a_{2,1} & 0 & 0 & -\frac{a_{2,1}}{a_{3,1}} \end{pmatrix},$$

$$\begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & 0 \\ 0 & 0 & a_{4,3} & \frac{-1+a_{4,3}}{a_{3,1}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & 0 \\ 0 & 0 & 0 & -\frac{1}{a_{3,1}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{2,1})\,a_{3,1}}{a_{2,1}} & 0 & 0 & 0 \\ a_{2,1} & -\frac{a_{2,1}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 0 & -\frac{a_{3,1}}{a_{2,1}} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & \frac{(-1+a_{2,3})\,a_{2,4}}{a_{2,3}} & a_{2,3} & a_{2,4} \\ 0 & 0 & -\frac{a_{2,3}}{a_{2,4}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & \frac{(-1+a_{2,3})\,a_{2,4}}{a_{2,3}} & a_{2,3} & a_{2,4} \\ 0 & 0 & -\frac{a_{2,3}}{a_{2,4}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & \frac{(-1+a_{2,3})\,a_{2,4}}{a_{2,3}} & a_{2,3} & a_{2,4} \\ 0 & 0 & -\frac{a_{2,3}}{a_{2,4}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{3,4}}{a_{2,4}} & 0 & 0 & 0 \\ 0 & -\frac{a_{2,4}}{a_{3,4}} & 0 & a_{2,4} \\ 0 & 0 & -\frac{a_{3,4}}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & \frac{a_{2,4}\,(-1+a_{3,4})}{a_{3,4}} \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,4}}{a_{2,4}} & 0 & 0 & a_{3,4} \\ 0 & -\frac{a_{2,4}}{a_{3,4}} & 0 & a_{2,4} \\ 0 & 0 & -\frac{a_{3,4}}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & \frac{a_{2,4}\,(-1+a_{3,4})}{a_{3,4}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & a_{2,4} \\ 0 & 0 & -\frac{1}{a_{2,4}} & 0 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} \frac{-1+a_{2,1}}{a_{2,4}} & 0 & 0 & 0 \\ a_{2,1} & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} \frac{-1+a_{1,2}}{a_{2,4}} & a_{1,2} & 0 & -a_{1,2} \\ 0 & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ a_{2,1} & \frac{-1+a_{2,1}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & 0 \\ 1 & \frac{1}{a_{3,1}} & 0 & -\frac{1}{a_{3,1}} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 1 & \frac{1}{a_{2,4}} & 1 \\ 0 & 0 & 1 & a_{2,4} \\ 0 & 0 & -\frac{1}{a_{2,4}} & 0 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} -\frac{1}{a_{2,4}} & 0 & \frac{1}{a_{2,4}} & 1 \\ 0 & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & \frac{(-1+a_{3,2})\,a_{4,2}}{a_{3,2}} & 0 & 0 \\ 0 & a_{3,2} & -\frac{a_{3,2}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & 0 & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix}, \begin{pmatrix} \frac{a_{3,2}}{(-1+a_{3,2})\,a_{4,2}} & 0 & 0 & 0 \\ 0 & \frac{(-1+a_{3,2})\,a_{4,2}}{a_{3,2}} & 0 & 0 \\ 0 & a_{3,2} & -\frac{a_{3,2}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & 0 & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & \frac{-1+a_{4,3}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & -a_{4,2} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & -\frac{1}{a_{4,2}} & 0 \\ 0 & a_{4,2} & 0 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & -\frac{1}{a_{4,2}} & 0 \\ 0 & a_{4,2} & 0 & -a_{4,2} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{3,3}}{-1+a_{3,2}} & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,3}}{-1+a_{3,2}} & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} a_{3,3} & 0 & 0 & 0 \\ 0 & \frac{1}{a_{3,3}} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{3,3} & 0 & 0 & 0 \\ 0 & \frac{1}{a_{3,3}} & 0 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & \frac{1}{a_{3,3}} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} a_{3,3} - a_{1,2} a_{3,3} & a_{1,2} & 0 & 0 \\ 0 & \frac{1}{a_{3,3}} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ \frac{1}{a_{4,2}} & 1 & -\frac{1}{a_{4,2}} & 0 \\ 1 & a_{4,2} & 0 & -a_{4,2} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix},$$

$$\begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -a_{1,3} & a_{1,2} & a_{1,3} & 0 \\ 0 & \frac{-1+a_{1,2}}{a_{1,3}} & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} -a_{1,3} & a_{1,2} & a_{1,3} & 0 \\ 0 & \frac{-1+a_{1,2}}{a_{1,3}} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} -a_{1,3} & 0 & a_{1,3} & a_{1,3}\,a_{2,4} \\ 0 & -\frac{1}{a_{1,3}} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & a_{1,3}\,a_{2,4} \\ 0 & 0 & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & a_{1,3}\,a_{2,4} \\ 0 & 0 & 1 & a_{2,4} \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{2,4} \\ 0 & 0 & \frac{-1+a_{3,4}}{a_{2,4}} & a_{3,4} \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & a_{1,3}\,a_{2,4} \\ 0 & 0 & 1 & a_{2,4} \\ 0 & 0 & -\frac{1}{a_{2,4}} & 0 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & 0 \\ a_{3,1}\,a_{4,2} & a_{4,2} & 1-a_{3,1}\,a_{4,2} & -a_{4,2} \end{pmatrix},$$

$$\begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -\frac{1}{a_{4,2}} & 0 \\ a_{3,1}\,a_{4,2} & a_{4,2} & 0 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & \frac{(-1+a_{3,2})\,a_{4,2}}{a_{3,2}} & 0 & 0 \\ 0 & a_{3,2} & -\frac{a_{3,2}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & 0 & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & \frac{(-1+a_{3,2})\,a_{4,2}}{a_{3,2}} & 0 & 0 \\ 0 & a_{3,2} & -\frac{a_{3,2}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & 0 & -\frac{a_{4,2}}{a_{3,2}} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & \frac{-1+a_{4,3}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & -a_{4,2} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,2}}{-1+a_{3,2}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & \frac{1}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{2,2} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,2}}{-1+a_{2,3}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,2}}{-1+a_{2,3}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & a_{2,3} & 0 \\ 0 & 0 & \frac{1-a_{2,3}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,2}}{-1+a_{2,3}} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & a_{3,4} \\ 0 & 0 & 0 & \frac{-1+a_{3,4}}{a_{3,1}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & 0 \\ -a_{4,3} & 0 & a_{4,3} & \frac{-1+a_{4,3}}{a_{3,1}} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,1}}{a_{3,2}} & 0 & 0 & 0 \\ 0 & -\frac{a_{3,2}}{a_{3,1}} & 0 & 0 \\ a_{3,1} & a_{3,2} & \frac{a_{3,1}(-1+a_{3,2})}{a_{3,2}} & 0 \\ -\frac{a_{3,2}}{-1+a_{3,2}} & -\frac{a_{3,2}^2}{a_{3,1}(-1+a_{3,2})} & 0 & \frac{a_{3,2}}{a_{3,1}(-1+a_{3,2})} \end{pmatrix},$$

$$\begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -\frac{1}{a_{4,2}} & 0 & 0 & 0 \\ 0 & -a_{4,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & -a_{4,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{-1+a_{2,1}}{a_{4,2}} & 0 & 0 & 0 \\ a_{2,1} & -a_{4,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix},$$

$$\begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{1-a_{3,2}}{a_{2,2}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,2}}{-1+a_{3,2}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -a_{1,3} & a_{1,2} & a_{1,3} & 0 \\ 0 & \frac{-1+a_{1,2}}{a_{1,3}} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} -a_{1,3} & 0 & a_{1,3} & 0 \\ 0 & -\frac{1}{a_{1,3}} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & 0 & a_{1,3} & 0 \\ 0 & -\frac{a_{2,3}}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & \frac{a_{1,3}(-1+a_{2,3})}{a_{2,3}} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} \frac{(-1+a_{1,2})\,a_{1,3}}{a_{1,2}} & a_{1,2} & a_{1,3} & a_{1,2} \\ 0 & -\frac{a_{1,2}}{a_{1,3}} & 0 & 0 \\ 0 & 0 & -\frac{a_{1,3}}{a_{1,2}} & 0 \\ 0 & 0 & 0 & -\frac{a_{1,2}}{a_{1,3}} \end{pmatrix}, \begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & 0 & a_{1,3} & 0 \\ 0 & -\frac{a_{2,3}}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & \frac{a_{1,3}\,(-1+a_{2,3})}{a_{2,3}} & 0 \\ 0 & 0 & 0 & \frac{a_{2,3}}{a_{1,3}\,(-1+a_{2,3})} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{1-a_{3,4}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{1-a_{4,3}}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & -a_{1,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & 0 & a_{1,3} & 0 \\ 0 & -\frac{a_{2,3}}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & \frac{a_{1,3}\,(-1+a_{2,3})}{a_{2,3}} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} \frac{(-1+a_{1,2})\,a_{1,3}}{a_{1,2}} & a_{1,2} & a_{1,3} & 0 \\ 0 & -\frac{a_{1,2}}{a_{1,3}} & 0 & 0 \\ 0 & 0 & -\frac{a_{1,3}}{a_{1,2}} & 0 \\ 0 & 0 & 0 & -\frac{a_{1,2}}{a_{1,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & -a_{1,3} & 0 \\ 0 & 0 & 0 & -\frac{1}{a_{1,3}} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & -a_{1,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & -a_{1,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{-1+a_{3,4}}{a_{1,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & \frac{1-a_{4,3}}{a_{4,4}} & 0 \\ 0 & 0 & a_{4,3} & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & \frac{1-a_{3,4}}{a_{4,4}} & a_{3,4} \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & a_{1,3} & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & -a_{1,3} & 0 \\ 0 & 0 & a_{4,3} & \frac{-1+a_{4,3}}{a_{1,3}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & a_{1,3} & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & -a_{1,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & a_{1,3} & -a_{3,4} \\ 1 & 0 & 1 & 0 \\ 0 & 0 & -a_{1,3} & a_{3,4} \\ 0 & 0 & 0 & \frac{-1+a_{3,4}}{a_{1,3}} \end{pmatrix}, \begin{pmatrix} \frac{-1+a_{2,1}}{a_{4,2}} & 0 & 0 & 0 \\ a_{2,1} & -a_{4,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ -a_{2,1} & a_{4,2} & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & -a_{4,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & a_{4,2} & 1 & 0 \end{pmatrix}, \begin{pmatrix} \frac{-1+a_{1,2}}{a_{4,2}} & a_{1,2} & 0 & 0 \\ 0 & -a_{4,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & a_{4,2} & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix},$$

$$\begin{pmatrix} a_{3,3} - a_{2,1}\,a_{3,3} & 0 & 0 & 0 \\ a_{2,1} & \frac{1}{a_{3,3}} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} -\frac{1}{a_{4,2}} & 0 & 0 & 0 \\ 0 & -a_{4,2} & 0 & 0 \\ 0 & a_{3,2} & \frac{-1+a_{3,2}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -\frac{a_{3,3}}{-1+a_{3,2}} & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,3}}{-1+a_{3,2}} & 0 & 0 & 0 \\ 0 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} \frac{1-a_{2,1}}{a_{2,2}} & 0 & 0 & 0 \\ a_{2,1} & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} \frac{1-a_{1,2}}{a_{2,2}} & a_{1,2} & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{3,3} & 0 & 0 & 0 \\ 0 & \frac{1}{a_{3,3}} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,3}}{-1+a_{2,3}} & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,3}}{-1+a_{2,3}} & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} -\frac{1}{a_{2,4}} & 0 & 0 & 0 \\ 0 & -a_{2,4} & a_{2,3} & a_{2,4} \\ 0 & 0 & \frac{-1+a_{2,3}}{a_{2,4}} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} \frac{a_{2,3}}{(-1+a_{2,3})\,a_{2,4}} & 0 & 0 & 0 \\ 0 & \frac{(-1+a_{2,3})\,a_{2,4}}{a_{2,3}} & a_{2,3} & a_{2,4} \\ 0 & 0 & -\frac{a_{2,3}}{a_{2,4}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix}, \begin{pmatrix} \frac{a_{2,3}}{(-1+a_{2,3})\,a_{2,4}} & 0 & -\frac{a_{2,3}^2}{(-1+a_{2,3})\,a_{2,4}} & -\frac{a_{2,3}}{-1+a_{2,3}} \\ 0 & \frac{(-1+a_{2,3})\,a_{2,4}}{a_{2,3}} & a_{2,3} & a_{2,4} \\ 0 & 0 & -\frac{a_{2,3}}{a_{2,4}} & 0 \\ 0 & 0 & 0 & -\frac{a_{2,4}}{a_{2,3}} \end{pmatrix},$$

$$\begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 0 & a_{1,3} & 1 \\ 0 & -\frac{1}{a_{1,3}} & 1 & \frac{1}{a_{1,3}} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix},$$

$$\begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 0 & a_{1,3} & 0 \\ 0 & -\frac{1}{a_{1,3}} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} \frac{(-1+a_{1,2})\,a_{1,3}}{a_{1,2}} & a_{1,2} & a_{1,3} & 0 \\ 0 & -\frac{a_{1,2}}{a_{1,3}} & 0 & 0 \\ 0 & 0 & -\frac{a_{1,3}}{a_{1,2}} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & \frac{1-a_{3,2}}{a_{3,3}} & 0 & 0 \\ 0 & a_{3,2} & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,3}}{-1+a_{2,3}} & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -\frac{a_{3,3}}{-1+a_{2,3}} & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} -a_{1,3} & 1-a_{1,3}\,a_{2,4} & a_{1,3} & a_{1,3}\,a_{2,4} \\ 0 & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & \frac{1-a_{2,3}}{a_{3,3}} & a_{2,3} & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} \frac{(-1+a_{1,2})\,a_{1,3}}{a_{1,2}} & a_{1,2} & a_{1,3} & 0 \\ 0 & -\frac{a_{1,2}}{a_{1,3}} & 0 & 0 \\ 0 & 0 & -\frac{a_{1,3}}{a_{1,2}} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & -a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & 0 & a_{1,3} & 0 \\ 0 & -\frac{a_{2,3}}{a_{1,3}} & a_{2,3} & 0 \\ 0 & 0 & \frac{a_{1,3}\,(-1+a_{2,3})}{a_{2,3}} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 1 & a_{1,3} & 1 \\ 0 & 0 & 1 & \frac{1}{a_{1,3}} \\ 0 & 0 & -a_{1,3} & 0 \\ 0 & 0 & 0 & -\frac{1}{a_{1,3}} \end{pmatrix}, \begin{pmatrix} -\frac{a_{1,3}}{a_{2,3}} & 0 & a_{1,3} & -\frac{a_{2,3}}{-1+a_{2,3}} \\ 0 & -\frac{a_{2,3}}{a_{1,3}} & a_{2,3} & -\frac{a_{2,3}^2}{a_{1,3}\,(-1+a_{2,3})} \\ 0 & 0 & \frac{a_{1,3}\,(-1+a_{2,3})}{a_{2,3}} & 0 \\ 0 & 0 & 0 & \frac{a_{2,3}}{a_{1,3}\,(-1+a_{2,3})} \end{pmatrix}, \begin{pmatrix} \frac{1}{2}\left(-a_{1,3}+\frac{\sqrt{a_{1,3}}\,\sqrt{4+a_{1,3}\,a_{2,4}}}{\sqrt{a_{2,4}}}\right) \\ 0 \\ 0 \\ 0 \end{pmatrix}$$

$$\begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ a_{3,1}\,a_{4,2} & a_{4,2} & 1 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & \frac{-1+a_{4,3}}{a_{4,2}} & 0 \\ 0 & a_{4,2} & a_{4,3} & -a_{4,2} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{2,4} \\ 0 & 0 & -\frac{1}{a_{2,4}} & 0 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} \frac{2\,a_{1,3}}{a_{1,3}\,a_{2,4}+\sqrt{a_{1,3}}\,\sqrt{a_{2,4}}\,\sqrt{4+a_{1,3}\,a_{2,4}}} & 0 \\ 0 & \frac{2\,a_{2,4}+a_{1,3}\,a_{2,4}^2+\sqrt{a_{1,3}}\,a_{2,4}^{3/2}\,\sqrt{4+a_{1,3}\,a_{2,4}}}{a_{1,3}\,a_{2,4}+\sqrt{a_{1,3}}\,\sqrt{a_{2,4}}\,\sqrt{4+a_{1,3}\,a_{2,4}}} \\ 0 & 0 \\ 0 & 0 \end{pmatrix} \quad \frac{1}{2}\left(-a_{1,3}\,a_{2}\right.$$

$$\frac{a_{1,}}{}$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{2,4} \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & a_{1,3} & a_{1,3}\,a_{2,4} \\ 1 & 0 & 1 & a_{2,4} \\ 0 & 0 & -a_{1,3} & 1-a_{1,3}\,a_{2,4} \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 0 & -\frac{1}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 0 & -\frac{1}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 0 & -\frac{1}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & \frac{1}{a_{2,2}} & 0 \\ 0 & 0 & 0 & a_{2,2} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ -1 & 0 & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & -1 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ a_{3,1} & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & -a_{4,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & a_{4,2} & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & -a_{4,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ -1 & a_{4,2} & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & -a_{4,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & a_{4,2} & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & -a_{4,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & a_{4,2} & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & -1 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{2,4} \\ 0 & 0 & -\frac{1}{a_{2,4}} & 0 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & a_{2,4} \\ 0 & 0 & -\frac{1}{a_{2,4}} & 0 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & a_{2,4} \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & a_{2,4} \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix},$$

$$\begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & -1 \\ 0 & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 0 & -\frac{1}{a_{3,1}} & 0 & 0 \\ a_{3,1} & 1 & 0 & 1 \\ 1 & \frac{1}{a_{3,1}} & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ -1 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & -\frac{1}{a_{4,2}} & 0 \\ 0 & a_{4,2} & 0 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{3,3} & 0 & 0 & 0 \\ 0 & \frac{1}{a_{3,3}} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{2,4} \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 0 & a_{1,3} & 0 \\ 0 & -\frac{1}{a_{1,3}} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 0 & a_{1,3} & 0 \\ 0 & -\frac{1}{a_{1,3}} & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 0 & a_{1,3} & 0 \\ 0 & -\frac{1}{a_{1,3}} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 1 & a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & -\frac{1}{a_{4,2}} & 0 \\ 0 & a_{4,2} & 0 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 0 & \frac{1}{a_{3,3}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & a_{4,4} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & 0 \\ -1 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ \frac{1}{a_{4,2}} & 1 & -\frac{1}{a_{4,2}} & 0 \\ 1 & a_{4,2} & 0 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & a_{1,3} & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & -a_{1,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & a_{1,3} & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & -a_{1,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & a_{1,3} & -1 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & -a_{1,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & a_{1,3} & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & -a_{1,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & -a_{3,1} & 0 \\ 1 & \frac{1}{a_{3,1}} & 0 & -\frac{1}{a_{3,1}} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & -a_{4,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -\frac{1}{a_{4,2}} & 0 & 0 & 0 \\ 0 & -a_{4,2} & 0 & 0 \\ 0 & 0 & -\frac{1}{a_{4,2}} & 0 \\ 0 & a_{4,2} & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} -\frac{1}{a_{4,2}} & 0 & 0 & 0 \\ 0 & -a_{4,2} & 0 & 0 \\ 0 & 0 & -\frac{1}{a_{4,2}} & 0 \\ 1 & a_{4,2} & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} -\frac{1}{a_{2,4}} & 0 & 0 & 0 \\ 0 & -a_{2,4} & 0 & a_{2,4} \\ 0 & 0 & -\frac{1}{a_{2,4}} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} -\frac{1}{a_{2,4}} & 0 & 0 & 1 \\ 0 & -a_{2,4} & 0 & a_{2,4} \\ 0 & 0 & -\frac{1}{a_{2,4}} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{3,3} & 0 & 0 & 0 \\ 0 & \frac{1}{a_{3,3}} & 0 & 0 \\ 0 & 0 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & a_{2,2} & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -\frac{1}{a_{2,4}} & 0 & \frac{1}{a_{2,4}} & 1 \\ 0 & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & a_{4,2} & 1 & -a_{4,2} \end{pmatrix},$$

$$\begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} -a_{1,3} & 0 & a_{1,3} & 1 \\ 0 & -\frac{1}{a_{1,3}} & 1 & \frac{1}{a_{1,3}} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} \frac{1}{a_{2,2}} & 0 & 0 & 0 \\ 0 & a_{2,2} & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} a_{1,1} & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & -a_{2,4} & 1 & a_{2,4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & a_{3,3} & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} -a_{3,1} & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ a_{3,1} & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & \frac{1}{a_{2,4}} & 1 \\ 1 & 0 & 1 & a_{2,4} \\ 0 & 0 & -\frac{1}{a_{2,4}} & 0 \\ 0 & 0 & 0 & -a_{2,4} \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ -1 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & -1 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & -1 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ -1 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ -1 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & -1 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix},$$

$$\begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{pmatrix} \Bigg\}$$