

```

SetDirectory["C:/drorbn/AcademicPensieve/Projects/Arrow_Diagrams_and_gl(N)"];
<< "Arrow_Diagrams_and_gl(N).m"
base = 10;

Uold[deg_, diag_] := Expand[Plus[
  UGLnBiAlg[diag] /. n^p_.*RW[l___] => EW[n^p*FromDigits[{1}, base^2]] //.
  h[i_]^p_.EW[l_] => EW[h[i]^p l],
  Coproduct[diag, 1] /. T[d1_, d2_] => Distribute[T[UGLnBiAlg[d1], UGLnBiAlg[d2]]] /.
  T[c_?NumberQ * a1_, a2_] => c*T[a1, a2] /.
  T[a1_, c_?NumberQ * a2_] => c*T[a1, a2] /. T[a1_, a2_] => EW[1, a1, a2],
  Coproduct[diag, 2] /. T[d1_, d2_] => Distribute[T[UGLnBiAlg[d1], UGLnBiAlg[d2]]] /.
  T[c_?NumberQ * a1_, a2_] => c*T[a1, a2] /.
  T[a1_, c_?NumberQ * a2_] => c*T[a1, a2] /. T[a1_, a2_] => EW[2, a1, a2]
]]

SOU[deg_, diag_] := Expand[Plus[
  USO[diag] /. n^p_.*RW[l___] => EW[n^p*FromDigits[{1}, base^2]] //.
  h[i_]^p_.EW[l_] => EW[h[i]^p l],
  (*Coproduct[diag, 1] /. T[d1_, d2_] => Distribute[T[UGLnBiAlg[d1], UGLnBiAlg[d2]]] /.
  T[c_?NumberQ * a1_, a2_] => c*T[a1,a2] /. T[a1_, c_?NumberQ * a2_] => c*T[a1,a2] /.
  T[a1_, a2_] => EW[1, a1, a2],
  Coproduct[diag, 2] /. T[d1_, d2_] => Distribute[T[UGLnBiAlg[d1], UGLnBiAlg[d2]]] /.
  T[c_?NumberQ * a1_, a2_] => c*T[a1,a2] /. T[a1_, c_?NumberQ * a2_] => c*T[a1,a2] /.
  T[a1_, a2_] => EW[2, a1, a2]*)
]]

EWS = Union[Cases[vs, _EW, Infinity]]

```

A very large output was generated. Here is a sample of it:

```

{EW[0], EW[111 111 111 111 n], EW[11 n^2], EW[22 n^2],
EW[1111 n^2], <<2844>>, EW[2, n^4 RW[14, 23, 32, 41], n h[1]^2 RW[]],
EW[2, n^4 RW[14, 23, 32, 41], n^2 RW[11]], EW[2, n^4 RW[14, 23, 32, 41], n^2 RW[22]],
EW[2, n^4 RW[14, 23, 32, 41], n RW[11, 11]], EW[2, n^4 RW[14, 23, 32, 41], n^2 RW[12, 21]]}

```

Show Less Show More Show Full Output Set Size Limit...

```
EWRule = Dispatch[Thread[EWS -> Array[v, {Length[EWS]}]]]
```

A very large output was generated. Here is a sample of it:

```

Dispatch[{EW[0] -> v[1], EW[111 111 111 111 n] -> v[2],
EW[11 n^2] -> v[3], <<2848>>, EW[2, n^4 RW[14, 23, 32, 41], n^2 RW[22]] -> v[2852],
EW[2, n^4 RW[14, 23, 32, 41], n RW[11, 11]] -> v[2853],
EW[2, n^4 RW[14, 23, 32, 41], n^2 RW[12, 21]] -> v[2854]}, -DispatchTables -]

```

Show Less Show More Show Full Output Set Size Limit...

```

mat = SparseArray[
  Join @@ Table[
    t = List @@ (vs[[i]] /. EWRule);
    Replace[#, c_. * v[j_] => ({i, j} -> c)] & /@ t,
    {i, Length[vs]}
  ],
  {Length[vs], Length[EWS]}
]
SparseArray[<248 814>, {120, 2854}]

ds = Take[BasisAArrow[4], All];
vs = Table[
  Print[i, " ", ds[[i]]];
  U[4, ds[[i]]],
  {i, Length[ds]}
];
Print["Finding EWS..."];
EWS = Union[Cases[vs, _EW, Infinity]];
EWRule = Dispatch[Thread[EWS -> Array[v, {Length[EWS]}]]];
Print["Computing mat..."];
Print[{Length[vs], Length[EWS]}];
mat = SparseArray[
  Join @@ Table[
    t = List @@ (vs[[i]] /. EWRule);
    Replace[#, c_. * v[j_] => ({i, j} -> c)] & /@ t,
    {i, Length[vs]}
  ],
  {Length[vs], Length[EWS]}
];
Print["Computing Rank..."];
MatrixRank[mat]

1 Diag[ar[5, 1], ar[6, 4], ar[7, 3], ar[8, 2]]
2 Diag[ar[3, 2], ar[6, 1], ar[7, 5], ar[8, 4]]
3 Diag[ar[4, 2], ar[6, 1], ar[7, 5], ar[8, 3]]
4 Diag[ar[4, 7], ar[5, 2], ar[6, 1], ar[8, 3]]
5 Diag[ar[5, 2], ar[6, 1], ar[7, 4], ar[8, 3]]
6 Diag[ar[4, 3], ar[6, 1], ar[7, 5], ar[8, 2]]
7 Diag[ar[4, 7], ar[5, 3], ar[6, 1], ar[8, 2]]
8 Diag[ar[5, 3], ar[6, 1], ar[7, 4], ar[8, 2]]
9 Diag[ar[4, 5], ar[6, 1], ar[7, 3], ar[8, 2]]
10 Diag[ar[5, 4], ar[6, 1], ar[7, 3], ar[8, 2]]
11 Diag[ar[1, 7], ar[4, 2], ar[6, 3], ar[8, 5]]
12 Diag[ar[1, 7], ar[3, 6], ar[4, 8], ar[5, 2]]
13 Diag[ar[1, 7], ar[3, 6], ar[5, 2], ar[8, 4]]
14 Diag[ar[1, 7], ar[5, 2], ar[6, 3], ar[8, 4]]

```

```
15 Diag[ar[1, 7], ar[3, 8], ar[5, 2], ar[6, 4]]
16 Diag[ar[1, 7], ar[5, 2], ar[6, 4], ar[8, 3]]
17 Diag[ar[1, 7], ar[2, 6], ar[5, 3], ar[8, 4]]
18 Diag[ar[1, 7], ar[4, 3], ar[6, 2], ar[8, 5]]
19 Diag[ar[1, 7], ar[3, 5], ar[4, 8], ar[6, 2]]
20 Diag[ar[1, 7], ar[3, 5], ar[6, 2], ar[8, 4]]
21 Diag[ar[1, 7], ar[4, 8], ar[5, 3], ar[6, 2]]
22 Diag[ar[1, 7], ar[5, 3], ar[6, 2], ar[8, 4]]
23 Diag[ar[1, 7], ar[3, 8], ar[4, 5], ar[6, 2]]
24 Diag[ar[1, 7], ar[3, 8], ar[5, 4], ar[6, 2]]
25 Diag[ar[1, 7], ar[4, 5], ar[6, 2], ar[8, 3]]
26 Diag[ar[1, 7], ar[5, 4], ar[6, 2], ar[8, 3]]
27 Diag[ar[1, 7], ar[2, 8], ar[5, 3], ar[6, 4]]
28 Diag[ar[1, 7], ar[2, 8], ar[5, 4], ar[6, 3]]
29 Diag[ar[1, 7], ar[3, 5], ar[6, 4], ar[8, 2]]
30 Diag[ar[1, 7], ar[4, 6], ar[5, 3], ar[8, 2]]
31 Diag[ar[1, 7], ar[5, 3], ar[6, 4], ar[8, 2]]
32 Diag[ar[1, 7], ar[5, 4], ar[6, 3], ar[8, 2]]
33 Diag[ar[3, 2], ar[4, 8], ar[6, 5], ar[7, 1]]
34 Diag[ar[3, 2], ar[6, 5], ar[7, 1], ar[8, 4]]
35 Diag[ar[4, 2], ar[5, 3], ar[6, 8], ar[7, 1]]
36 Diag[ar[4, 2], ar[5, 3], ar[7, 1], ar[8, 6]]
37 Diag[ar[4, 2], ar[5, 8], ar[6, 3], ar[7, 1]]
38 Diag[ar[4, 2], ar[6, 3], ar[7, 1], ar[8, 5]]
39 Diag[ar[2, 5], ar[4, 8], ar[6, 3], ar[7, 1]]
40 Diag[ar[2, 5], ar[6, 3], ar[7, 1], ar[8, 4]]
41 Diag[ar[3, 4], ar[5, 2], ar[6, 8], ar[7, 1]]
42 Diag[ar[3, 4], ar[5, 2], ar[7, 1], ar[8, 6]]
43 Diag[ar[4, 3], ar[5, 2], ar[6, 8], ar[7, 1]]
44 Diag[ar[4, 3], ar[5, 2], ar[7, 1], ar[8, 6]]
45 Diag[ar[3, 6], ar[4, 8], ar[5, 2], ar[7, 1]]
46 Diag[ar[3, 6], ar[5, 2], ar[7, 1], ar[8, 4]]
47 Diag[ar[4, 8], ar[5, 2], ar[6, 3], ar[7, 1]]
48 Diag[ar[5, 2], ar[6, 3], ar[7, 1], ar[8, 4]]
49 Diag[ar[3, 8], ar[4, 6], ar[5, 2], ar[7, 1]]
```

```
50 Diag[ar[3, 8], ar[5, 2], ar[6, 4], ar[7, 1]]
51 Diag[ar[4, 6], ar[5, 2], ar[7, 1], ar[8, 3]]
52 Diag[ar[5, 2], ar[6, 4], ar[7, 1], ar[8, 3]]
53 Diag[ar[2, 6], ar[4, 3], ar[5, 8], ar[7, 1]]
54 Diag[ar[2, 6], ar[4, 3], ar[7, 1], ar[8, 5]]
55 Diag[ar[2, 6], ar[3, 5], ar[4, 8], ar[7, 1]]
56 Diag[ar[2, 6], ar[3, 5], ar[7, 1], ar[8, 4]]
57 Diag[ar[2, 6], ar[4, 8], ar[5, 3], ar[7, 1]]
58 Diag[ar[2, 6], ar[5, 3], ar[7, 1], ar[8, 4]]
59 Diag[ar[2, 6], ar[3, 8], ar[5, 4], ar[7, 1]]
60 Diag[ar[2, 6], ar[4, 5], ar[7, 1], ar[8, 3]]
61 Diag[ar[2, 6], ar[5, 4], ar[7, 1], ar[8, 3]]
62 Diag[ar[4, 3], ar[5, 8], ar[6, 2], ar[7, 1]]
63 Diag[ar[4, 3], ar[6, 2], ar[7, 1], ar[8, 5]]
64 Diag[ar[3, 5], ar[4, 8], ar[6, 2], ar[7, 1]]
65 Diag[ar[3, 5], ar[6, 2], ar[7, 1], ar[8, 4]]
66 Diag[ar[4, 8], ar[5, 3], ar[6, 2], ar[7, 1]]
67 Diag[ar[5, 3], ar[6, 2], ar[7, 1], ar[8, 4]]
68 Diag[ar[3, 8], ar[4, 5], ar[6, 2], ar[7, 1]]
69 Diag[ar[3, 8], ar[5, 4], ar[6, 2], ar[7, 1]]
70 Diag[ar[4, 5], ar[6, 2], ar[7, 1], ar[8, 3]]
71 Diag[ar[5, 4], ar[6, 2], ar[7, 1], ar[8, 3]]
72 Diag[ar[2, 8], ar[3, 5], ar[6, 4], ar[7, 1]]
73 Diag[ar[2, 8], ar[4, 6], ar[5, 3], ar[7, 1]]
74 Diag[ar[2, 8], ar[5, 3], ar[6, 4], ar[7, 1]]
75 Diag[ar[2, 8], ar[3, 6], ar[4, 5], ar[7, 1]]
76 Diag[ar[2, 8], ar[3, 6], ar[5, 4], ar[7, 1]]
77 Diag[ar[2, 8], ar[4, 5], ar[6, 3], ar[7, 1]]
78 Diag[ar[2, 8], ar[5, 4], ar[6, 3], ar[7, 1]]
79 Diag[ar[3, 5], ar[6, 4], ar[7, 1], ar[8, 2]]
80 Diag[ar[4, 6], ar[5, 3], ar[7, 1], ar[8, 2]]
81 Diag[ar[5, 3], ar[6, 4], ar[7, 1], ar[8, 2]]
82 Diag[ar[3, 6], ar[4, 5], ar[7, 1], ar[8, 2]]
83 Diag[ar[3, 6], ar[5, 4], ar[7, 1], ar[8, 2]]
84 Diag[ar[4, 5], ar[6, 3], ar[7, 1], ar[8, 2]]
```

```
85 Diag[ar[5, 4], ar[6, 3], ar[7, 1], ar[8, 2]]
86 Diag[ar[1, 8], ar[5, 2], ar[6, 4], ar[7, 3]]
87 Diag[ar[1, 8], ar[2, 6], ar[4, 7], ar[5, 3]]
88 Diag[ar[1, 8], ar[2, 6], ar[5, 3], ar[7, 4]]
89 Diag[ar[1, 8], ar[4, 3], ar[5, 7], ar[6, 2]]
90 Diag[ar[1, 8], ar[4, 3], ar[6, 2], ar[7, 5]]
91 Diag[ar[1, 8], ar[3, 5], ar[4, 7], ar[6, 2]]
92 Diag[ar[1, 8], ar[3, 5], ar[6, 2], ar[7, 4]]
93 Diag[ar[1, 8], ar[4, 7], ar[5, 3], ar[6, 2]]
94 Diag[ar[1, 8], ar[5, 3], ar[6, 2], ar[7, 4]]
95 Diag[ar[1, 8], ar[3, 7], ar[4, 5], ar[6, 2]]
96 Diag[ar[1, 8], ar[3, 7], ar[5, 4], ar[6, 2]]
97 Diag[ar[1, 8], ar[4, 5], ar[6, 2], ar[7, 3]]
98 Diag[ar[1, 8], ar[5, 4], ar[6, 2], ar[7, 3]]
99 Diag[ar[1, 8], ar[2, 7], ar[3, 5], ar[6, 4]]
100 Diag[ar[1, 8], ar[2, 7], ar[4, 6], ar[5, 3]]
101 Diag[ar[1, 8], ar[2, 7], ar[5, 3], ar[6, 4]]
102 Diag[ar[1, 8], ar[2, 7], ar[3, 6], ar[4, 5]]
103 Diag[ar[1, 8], ar[2, 7], ar[3, 6], ar[5, 4]]
104 Diag[ar[1, 8], ar[2, 7], ar[4, 5], ar[6, 3]]
105 Diag[ar[1, 8], ar[2, 7], ar[5, 4], ar[6, 3]]
106 Diag[ar[1, 8], ar[3, 5], ar[6, 4], ar[7, 2]]
107 Diag[ar[1, 8], ar[4, 6], ar[5, 3], ar[7, 2]]
108 Diag[ar[1, 8], ar[5, 3], ar[6, 4], ar[7, 2]]
109 Diag[ar[1, 8], ar[3, 6], ar[4, 5], ar[7, 2]]
110 Diag[ar[1, 8], ar[3, 6], ar[5, 4], ar[7, 2]]
111 Diag[ar[1, 8], ar[4, 5], ar[6, 3], ar[7, 2]]
112 Diag[ar[1, 8], ar[5, 4], ar[6, 3], ar[7, 2]]
113 Diag[ar[5, 2], ar[6, 4], ar[7, 3], ar[8, 1]]
114 Diag[ar[2, 6], ar[4, 7], ar[5, 3], ar[8, 1]]
115 Diag[ar[2, 6], ar[5, 3], ar[7, 4], ar[8, 1]]
116 Diag[ar[4, 3], ar[5, 7], ar[6, 2], ar[8, 1]]
117 Diag[ar[4, 3], ar[6, 2], ar[7, 5], ar[8, 1]]
118 Diag[ar[3, 5], ar[4, 7], ar[6, 2], ar[8, 1]]
119 Diag[ar[3, 5], ar[6, 2], ar[7, 4], ar[8, 1]]
```

```

120 Diag[ar[4, 7], ar[5, 3], ar[6, 2], ar[8, 1]]
121 Diag[ar[5, 3], ar[6, 2], ar[7, 4], ar[8, 1]]
122 Diag[ar[3, 7], ar[4, 5], ar[6, 2], ar[8, 1]]
123 Diag[ar[3, 7], ar[5, 4], ar[6, 2], ar[8, 1]]
124 Diag[ar[4, 5], ar[6, 2], ar[7, 3], ar[8, 1]]
125 Diag[ar[5, 4], ar[6, 2], ar[7, 3], ar[8, 1]]
126 Diag[ar[2, 7], ar[3, 5], ar[6, 4], ar[8, 1]]
127 Diag[ar[2, 7], ar[4, 6], ar[5, 3], ar[8, 1]]
128 Diag[ar[2, 7], ar[5, 3], ar[6, 4], ar[8, 1]]
129 Diag[ar[2, 7], ar[3, 6], ar[4, 5], ar[8, 1]]
130 Diag[ar[2, 7], ar[3, 6], ar[5, 4], ar[8, 1]]
131 Diag[ar[2, 7], ar[4, 5], ar[6, 3], ar[8, 1]]
132 Diag[ar[2, 7], ar[5, 4], ar[6, 3], ar[8, 1]]
133 Diag[ar[3, 5], ar[6, 4], ar[7, 2], ar[8, 1]]
134 Diag[ar[4, 6], ar[5, 3], ar[7, 2], ar[8, 1]]
135 Diag[ar[5, 3], ar[6, 4], ar[7, 2], ar[8, 1]]
136 Diag[ar[3, 6], ar[4, 5], ar[7, 2], ar[8, 1]]
137 Diag[ar[3, 6], ar[5, 4], ar[7, 2], ar[8, 1]]
138 Diag[ar[4, 5], ar[6, 3], ar[7, 2], ar[8, 1]]
139 Diag[ar[5, 4], ar[6, 3], ar[7, 2], ar[8, 1]]

```

Finding EWs...

Computing mat...

```
{139, 69 114}
```

Computing Rank...

122

```

arbit = {Diagrams[4 ar][[1]]};
For[i = 1, i < 17, i++,
  arbit = Append[arbit, Diagrams[4 ar][[i * 100]]];

```

```
arbit
```

```
{Diag[ar[1, 2], ar[3, 4], ar[5, 6], ar[7, 8]],
  Diag[ar[1, 2], ar[3, 8], ar[5, 4], ar[7, 6]], Diag[ar[2, 1], ar[3, 7], ar[6, 4], ar[8, 5]],
  Diag[ar[1, 3], ar[2, 6], ar[7, 5], ar[8, 4]], Diag[ar[3, 1], ar[5, 2], ar[6, 4], ar[8, 7]],
  Diag[ar[1, 4], ar[3, 2], ar[7, 5], ar[8, 6]], Diag[ar[1, 4], ar[6, 5], ar[7, 3], ar[8, 2]],
  Diag[ar[2, 8], ar[4, 1], ar[5, 3], ar[7, 6]], Diag[ar[1, 5], ar[2, 7], ar[6, 3], ar[8, 4]],
  Diag[ar[2, 6], ar[5, 1], ar[7, 4], ar[8, 3]], Diag[ar[1, 6], ar[4, 2], ar[5, 3], ar[8, 7]],
  Diag[ar[3, 2], ar[6, 1], ar[7, 4], ar[8, 5]], Diag[ar[5, 4], ar[6, 1], ar[7, 3], ar[8, 2]],
  Diag[ar[1, 7], ar[2, 8], ar[4, 3], ar[6, 5]], Diag[ar[2, 6], ar[5, 3], ar[7, 1], ar[8, 4]],
  Diag[ar[1, 8], ar[2, 5], ar[6, 4], ar[7, 3]], Diag[ar[4, 2], ar[5, 3], ar[7, 6], ar[8, 1]]}
```

```
ds = Join[Take[BasisAArrow[4], All], arbit];
```

```
Length[Union[ds]]
```

```
154
```

```
SaveUSO[diag_Diag] := Module[
```

```
{fname},
```

```
fname = StringJoin[
```

```
  "USOFor",
```

```
  ToString[FromDigits[Cases[diag, _Integer, Infinity], sbase]],
```

```
  ".m"
```

```
];
```

```
Print["Saving ", fname, " ..."];
```

```
Put[{diag, USO[diag]}, fname];
```

```
]
```

```
For[i = 1, i ≤ Length[ds], i++,
```

```
  Print[i, " ", ds[[i]]];
```

```
  SaveUSO[ds[[i]]]
```

```
];
```

```
1 Diag[ar[5, 1], ar[6, 4], ar[7, 3], ar[8, 2]]
```

```
Saving USOFor51647382.m ...
```

```
{1390450, 166564}
```

```
8 Diag[ar[5, 3], ar[6, 1], ar[7, 4], ar[8, 2]]
```

```
Saving USOFor53617482.m ...
```

```
{1390450, 165573}
```

```
8 Diag[ar[5, 3], ar[6, 1], ar[7, 4], ar[8, 2]]
```

```
Saving USOFor53617482.m ...
```

```
{1390450, 165573}
```

```
8 Diag[ar[5, 3], ar[6, 1], ar[7, 4], ar[8, 2]]
```

```
Saving USOFor53617482.m ...
```

```
SetDirectory["/scratch/leung"]
```

```
/scratch/leung
```

```

Directory[]
/scratch/leung

For[index = 1, index ≤ Length[ds], i++,
  Print[i, " ", ds[[i]]];
  SaveUSO[ds[[i]]]
];
1 Diag[ar[1, 3], ar[4, 2]]
Saving USOFFor1342.m ...
2 Diag[ar[2, 4], ar[3, 1]]
Saving USOFFor2431.m ...
3 Diag[ar[3, 1], ar[4, 2]]
Saving USOFFor3142.m ...
4 Diag[ar[1, 4], ar[2, 3]]
Saving USOFFor1423.m ...
5 Diag[ar[1, 4], ar[3, 2]]
Saving USOFFor1432.m ...
6 Diag[ar[2, 3], ar[4, 1]]
Saving USOFFor2341.m ...
7 Diag[ar[3, 2], ar[4, 1]]
Saving USOFFor3241.m ...

For[index = 45, index ≤ Length[ds], index++,
  Print[index, " ", ds[[index]]];
  Timing[SaveUSO[ds[[index]]]]
];

Length[Diagrams[4 ar]]

1680

For[index = 1, index ≤ Length[ds], index++,
  Print[index, " ", ds[[index]]];
];

SetDirectory["/scratch/leung"]

/scratch/leung

Directory[]

/scratch/leung

For[index = 132, index ≤ Length[ds], index++,
  Print[index, " ", ds[[index]]];
  Print[Timing[SaveUSO[ds[[index]]]]]
];

132 Diag[ar[2, 7], ar[5, 4], ar[6, 3], ar[8, 1]]

```



```
Saving USOFor27546381.m ...
{1390450, 163200}
{8942.58, Null}
133 Diag[ar[3, 5], ar[6, 4], ar[7, 2], ar[8, 1]]
Saving USOFor35647281.m ...
{1390450, 168279}
{10209.2, Null}
134 Diag[ar[4, 6], ar[5, 3], ar[7, 2], ar[8, 1]]
Saving USOFor46537281.m ...
{1390450, 168279}
{10141.1, Null}
135 Diag[ar[5, 3], ar[6, 4], ar[7, 2], ar[8, 1]]
Saving USOFor53647281.m ...
{1390450, 163041}
{19222.9, Null}
136 Diag[ar[3, 6], ar[4, 5], ar[7, 2], ar[8, 1]]
Saving USOFor36457281.m ...
{1390450, 161672}
{5302.77, Null}
137 Diag[ar[3, 6], ar[5, 4], ar[7, 2], ar[8, 1]]
Saving USOFor36547281.m ...
{1390450, 163205}
{9959.66, Null}
138 Diag[ar[4, 5], ar[6, 3], ar[7, 2], ar[8, 1]]
Saving USOFor45637281.m ...
{1390450, 162469}
{10844., Null}
139 Diag[ar[5, 4], ar[6, 3], ar[7, 2], ar[8, 1]]
Saving USOFor54637281.m ...
{1390450, 160852}
{19435.7, Null}
140 Diag[ar[1, 2], ar[3, 4], ar[5, 6], ar[7, 8]]
Saving USOFor12345678.m ...
{1390450, 84647}
{1429.37, Null}
```

141 Diag[ar[1, 2], ar[3, 8], ar[5, 4], ar[7, 6]]

Saving USOFor12385476.m ...

{1390450, 160308}

{4458.03, Null}

142 Diag[ar[2, 1], ar[3, 7], ar[6, 4], ar[8, 5]]

Saving USOFor21376485.m ...

{1390450, 170661}

{8721.88, Null}

143 Diag[ar[1, 3], ar[2, 6], ar[7, 5], ar[8, 4]]

Saving USOFor13267584.m ...

{1390450, 168186}

{4561.1, Null}

144 Diag[ar[3, 1], ar[5, 2], ar[6, 4], ar[8, 7]]

Saving USOFor31526487.m ...

{1390450, 166132}

{17923.5, Null}

145 Diag[ar[1, 4], ar[3, 2], ar[7, 5], ar[8, 6]]

Saving USOFor14327586.m ...

{1390450, 162899}

{8573.84, Null}

146 Diag[ar[1, 4], ar[6, 5], ar[7, 3], ar[8, 2]]

Saving USOFor14657382.m ...

{1390450, 170112}

{9678.95, Null}

147 Diag[ar[2, 8], ar[4, 1], ar[5, 3], ar[7, 6]]

Saving USOFor28415376.m ...

{1390450, 170625}

{7930.42, Null}

148 Diag[ar[1, 5], ar[2, 7], ar[6, 3], ar[8, 4]]

Saving USOFor15276384.m ...

{1390450, 166039}

{4251.15, Null}

149 Diag[ar[2, 6], ar[5, 1], ar[7, 4], ar[8, 3]]

Saving USOFor26517483.m ...

{1390450, 169605}

```
{9141.02, Null}
150 Diag[ar[1, 6], ar[4, 2], ar[5, 3], ar[8, 7]]
Saving USOFFor16425387.m ...
{1390450, 162983}
{8135.63, Null}
151 Diag[ar[3, 2], ar[6, 1], ar[7, 4], ar[8, 5]]
Saving USOFFor32617485.m ...
{1390450, 166982}
{18613.4, Null}
152 Diag[ar[5, 4], ar[6, 1], ar[7, 3], ar[8, 2]]
Saving USOFFor54617382.m ...
{1390450, 166463}
{19781.2, Null}
153 Diag[ar[1, 7], ar[2, 8], ar[4, 3], ar[6, 5]]
Saving USOFFor17284365.m ...
{1390450, 160200}
{3453.42, Null}
154 Diag[ar[2, 6], ar[5, 3], ar[7, 1], ar[8, 4]]
Saving USOFFor26537184.m ...
{1390450, 170897}
{9584.75, Null}
155 Diag[ar[1, 8], ar[2, 5], ar[6, 4], ar[7, 3]]
Saving USOFFor18256473.m ...
{1390450, 167317}
{3961.55, Null}
156 Diag[ar[4, 2], ar[5, 3], ar[7, 6], ar[8, 1]]
Saving USOFFor42537681.m ...
{1390450, 163131}
{18121.7, Null}
```

```
Import [
  "http://katlas.math.toronto.edu/drorbn/AcademicPensieve/Projects/Arrow_Diagrams_and_gl(N)
  /data/UGLFor17384562.m"]
```

A very large output was generated. Here is a sample of it:

```
{Diag[ar[1, 7], ar[3, 8], ar[4, 5], ar[6, 2]],
   $\frac{1}{16} n h[1]^2 RW[] - \frac{1}{8} n^2 h[1]^2 RW[11] - \frac{1}{4} n^3 h[1]^2 RW[11] - \frac{1}{8} n^2 h[1]^3 RW[11] -$ 
   $\frac{1}{4} n^3 h[1]^3 RW[11] + \ll 51\ 167 \gg + 24 n^8 RW[18, 26, 35, 47, 53, 62, 74, 81] +$ 
   $24 n^8 RW[18, 26, 37, 45, 54, 62, 73, 81] + 24 n^8 RW[18, 27, 34, 43, 56, 65, 72, 81] +$ 
   $24 n^8 RW[18, 27, 35, 46, 53, 64, 72, 81] + 24 n^8 RW[18, 27, 36, 45, 54, 63, 72, 81]}$ 
```

Show Less Show More Show Full Output Set Size Limit...

```
Put[Import [
  "http://katlas.math.toronto.edu/drorbn/AcademicPensieve/Projects/Arrow_Diagrams_and_gl(N)
  /data/UGLFor17384562.m"], "trial.m"]
```

```
Get["trial.m"]
```

A very large output was generated. Here is a sample of it:

```
{Diag[ar[1, 7], ar[3, 8], ar[4, 5], ar[6, 2]],
   $\frac{1}{16} n h[1]^2 RW[] - \frac{1}{8} n^2 h[1]^2 RW[11] - \frac{1}{4} n^3 h[1]^2 RW[11] - \frac{1}{8} n^2 h[1]^3 RW[11] -$ 
   $\frac{1}{4} n^3 h[1]^3 RW[11] + \ll 51\ 167 \gg + 24 n^8 RW[18, 26, 35, 47, 53, 62, 74, 81] +$ 
   $24 n^8 RW[18, 26, 37, 45, 54, 62, 73, 81] + 24 n^8 RW[18, 27, 34, 43, 56, 65, 72, 81] +$ 
   $24 n^8 RW[18, 27, 35, 46, 53, 64, 72, 81] + 24 n^8 RW[18, 27, 36, 45, 54, 63, 72, 81]}$ 
```

Show Less Show More Show Full Output Set Size Limit...

```
For[index = 1, index ≤ Length[ds], index++,
  Print[index, " ", ds[[index]];
  diag = ds[[index]];
  fname = StringJoin[
    "UGLFor",
    ToString[FromDigits[Cases[diag, _Integer, Infinity], sbase]],
    ".m"
  ];
  Put[Import [
    "http://katlas.math.toronto.edu/drorbn/AcademicPensieve/Projects/Arrow_Diagrams_and_gl
    (N)/data/" <> fname], fname]
];
```

```
1 Diag[ar[5, 1], ar[6, 4], ar[7, 3], ar[8, 2]]
```

```
2 Diag[ar[3, 2], ar[6, 1], ar[7, 5], ar[8, 4]]
```

```
3 Diag[ar[4, 2], ar[6, 1], ar[7, 5], ar[8, 3]]
```

```
4 Diag[ar[4, 7], ar[5, 2], ar[6, 1], ar[8, 3]]
```

```
5 Diag[ar[5, 2], ar[6, 1], ar[7, 4], ar[8, 3]]
6 Diag[ar[4, 3], ar[6, 1], ar[7, 5], ar[8, 2]]
7 Diag[ar[4, 7], ar[5, 3], ar[6, 1], ar[8, 2]]
8 Diag[ar[5, 3], ar[6, 1], ar[7, 4], ar[8, 2]]
9 Diag[ar[4, 5], ar[6, 1], ar[7, 3], ar[8, 2]]
10 Diag[ar[5, 4], ar[6, 1], ar[7, 3], ar[8, 2]]
11 Diag[ar[1, 7], ar[4, 2], ar[6, 3], ar[8, 5]]
12 Diag[ar[1, 7], ar[3, 6], ar[4, 8], ar[5, 2]]
13 Diag[ar[1, 7], ar[3, 6], ar[5, 2], ar[8, 4]]
14 Diag[ar[1, 7], ar[5, 2], ar[6, 3], ar[8, 4]]
15 Diag[ar[1, 7], ar[3, 8], ar[5, 2], ar[6, 4]]
16 Diag[ar[1, 7], ar[5, 2], ar[6, 4], ar[8, 3]]
17 Diag[ar[1, 7], ar[2, 6], ar[5, 3], ar[8, 4]]
18 Diag[ar[1, 7], ar[4, 3], ar[6, 2], ar[8, 5]]
19 Diag[ar[1, 7], ar[3, 5], ar[4, 8], ar[6, 2]]
20 Diag[ar[1, 7], ar[3, 5], ar[6, 2], ar[8, 4]]
21 Diag[ar[1, 7], ar[4, 8], ar[5, 3], ar[6, 2]]
22 Diag[ar[1, 7], ar[5, 3], ar[6, 2], ar[8, 4]]
23 Diag[ar[1, 7], ar[3, 8], ar[4, 5], ar[6, 2]]
24 Diag[ar[1, 7], ar[3, 8], ar[5, 4], ar[6, 2]]
25 Diag[ar[1, 7], ar[4, 5], ar[6, 2], ar[8, 3]]
26 Diag[ar[1, 7], ar[5, 4], ar[6, 2], ar[8, 3]]
27 Diag[ar[1, 7], ar[2, 8], ar[5, 3], ar[6, 4]]
28 Diag[ar[1, 7], ar[2, 8], ar[5, 4], ar[6, 3]]
29 Diag[ar[1, 7], ar[3, 5], ar[6, 4], ar[8, 2]]
30 Diag[ar[1, 7], ar[4, 6], ar[5, 3], ar[8, 2]]
31 Diag[ar[1, 7], ar[5, 3], ar[6, 4], ar[8, 2]]
32 Diag[ar[1, 7], ar[5, 4], ar[6, 3], ar[8, 2]]
33 Diag[ar[3, 2], ar[4, 8], ar[6, 5], ar[7, 1]]
34 Diag[ar[3, 2], ar[6, 5], ar[7, 1], ar[8, 4]]
35 Diag[ar[4, 2], ar[5, 3], ar[6, 8], ar[7, 1]]
36 Diag[ar[4, 2], ar[5, 3], ar[7, 1], ar[8, 6]]
37 Diag[ar[4, 2], ar[5, 8], ar[6, 3], ar[7, 1]]
38 Diag[ar[4, 2], ar[6, 3], ar[7, 1], ar[8, 5]]
39 Diag[ar[2, 5], ar[4, 8], ar[6, 3], ar[7, 1]]
```

```
40 Diag[ar[2, 5], ar[6, 3], ar[7, 1], ar[8, 4]]
41 Diag[ar[3, 4], ar[5, 2], ar[6, 8], ar[7, 1]]
42 Diag[ar[3, 4], ar[5, 2], ar[7, 1], ar[8, 6]]
43 Diag[ar[4, 3], ar[5, 2], ar[6, 8], ar[7, 1]]
44 Diag[ar[4, 3], ar[5, 2], ar[7, 1], ar[8, 6]]
45 Diag[ar[3, 6], ar[4, 8], ar[5, 2], ar[7, 1]]
46 Diag[ar[3, 6], ar[5, 2], ar[7, 1], ar[8, 4]]
47 Diag[ar[4, 8], ar[5, 2], ar[6, 3], ar[7, 1]]
48 Diag[ar[5, 2], ar[6, 3], ar[7, 1], ar[8, 4]]
49 Diag[ar[3, 8], ar[4, 6], ar[5, 2], ar[7, 1]]
50 Diag[ar[3, 8], ar[5, 2], ar[6, 4], ar[7, 1]]
51 Diag[ar[4, 6], ar[5, 2], ar[7, 1], ar[8, 3]]
52 Diag[ar[5, 2], ar[6, 4], ar[7, 1], ar[8, 3]]
53 Diag[ar[2, 6], ar[4, 3], ar[5, 8], ar[7, 1]]
54 Diag[ar[2, 6], ar[4, 3], ar[7, 1], ar[8, 5]]
55 Diag[ar[2, 6], ar[3, 5], ar[4, 8], ar[7, 1]]
56 Diag[ar[2, 6], ar[3, 5], ar[7, 1], ar[8, 4]]
57 Diag[ar[2, 6], ar[4, 8], ar[5, 3], ar[7, 1]]
58 Diag[ar[2, 6], ar[5, 3], ar[7, 1], ar[8, 4]]
59 Diag[ar[2, 6], ar[3, 8], ar[5, 4], ar[7, 1]]
60 Diag[ar[2, 6], ar[4, 5], ar[7, 1], ar[8, 3]]
61 Diag[ar[2, 6], ar[5, 4], ar[7, 1], ar[8, 3]]
62 Diag[ar[4, 3], ar[5, 8], ar[6, 2], ar[7, 1]]
63 Diag[ar[4, 3], ar[6, 2], ar[7, 1], ar[8, 5]]
64 Diag[ar[3, 5], ar[4, 8], ar[6, 2], ar[7, 1]]
65 Diag[ar[3, 5], ar[6, 2], ar[7, 1], ar[8, 4]]
66 Diag[ar[4, 8], ar[5, 3], ar[6, 2], ar[7, 1]]
67 Diag[ar[5, 3], ar[6, 2], ar[7, 1], ar[8, 4]]
68 Diag[ar[3, 8], ar[4, 5], ar[6, 2], ar[7, 1]]
69 Diag[ar[3, 8], ar[5, 4], ar[6, 2], ar[7, 1]]
70 Diag[ar[4, 5], ar[6, 2], ar[7, 1], ar[8, 3]]
71 Diag[ar[5, 4], ar[6, 2], ar[7, 1], ar[8, 3]]
72 Diag[ar[2, 8], ar[3, 5], ar[6, 4], ar[7, 1]]
73 Diag[ar[2, 8], ar[4, 6], ar[5, 3], ar[7, 1]]
74 Diag[ar[2, 8], ar[5, 3], ar[6, 4], ar[7, 1]]
```

```
75 Diag[ar[2, 8], ar[3, 6], ar[4, 5], ar[7, 1]]
76 Diag[ar[2, 8], ar[3, 6], ar[5, 4], ar[7, 1]]
77 Diag[ar[2, 8], ar[4, 5], ar[6, 3], ar[7, 1]]
78 Diag[ar[2, 8], ar[5, 4], ar[6, 3], ar[7, 1]]
79 Diag[ar[3, 5], ar[6, 4], ar[7, 1], ar[8, 2]]
80 Diag[ar[4, 6], ar[5, 3], ar[7, 1], ar[8, 2]]
81 Diag[ar[5, 3], ar[6, 4], ar[7, 1], ar[8, 2]]
82 Diag[ar[3, 6], ar[4, 5], ar[7, 1], ar[8, 2]]
83 Diag[ar[3, 6], ar[5, 4], ar[7, 1], ar[8, 2]]
84 Diag[ar[4, 5], ar[6, 3], ar[7, 1], ar[8, 2]]
85 Diag[ar[5, 4], ar[6, 3], ar[7, 1], ar[8, 2]]
86 Diag[ar[1, 8], ar[5, 2], ar[6, 4], ar[7, 3]]
87 Diag[ar[1, 8], ar[2, 6], ar[4, 7], ar[5, 3]]
88 Diag[ar[1, 8], ar[2, 6], ar[5, 3], ar[7, 4]]
89 Diag[ar[1, 8], ar[4, 3], ar[5, 7], ar[6, 2]]
90 Diag[ar[1, 8], ar[4, 3], ar[6, 2], ar[7, 5]]
91 Diag[ar[1, 8], ar[3, 5], ar[4, 7], ar[6, 2]]
92 Diag[ar[1, 8], ar[3, 5], ar[6, 2], ar[7, 4]]
93 Diag[ar[1, 8], ar[4, 7], ar[5, 3], ar[6, 2]]
94 Diag[ar[1, 8], ar[5, 3], ar[6, 2], ar[7, 4]]
95 Diag[ar[1, 8], ar[3, 7], ar[4, 5], ar[6, 2]]
96 Diag[ar[1, 8], ar[3, 7], ar[5, 4], ar[6, 2]]
97 Diag[ar[1, 8], ar[4, 5], ar[6, 2], ar[7, 3]]
98 Diag[ar[1, 8], ar[5, 4], ar[6, 2], ar[7, 3]]
99 Diag[ar[1, 8], ar[2, 7], ar[3, 5], ar[6, 4]]
100 Diag[ar[1, 8], ar[2, 7], ar[4, 6], ar[5, 3]]
101 Diag[ar[1, 8], ar[2, 7], ar[5, 3], ar[6, 4]]
102 Diag[ar[1, 8], ar[2, 7], ar[3, 6], ar[4, 5]]
103 Diag[ar[1, 8], ar[2, 7], ar[3, 6], ar[5, 4]]
104 Diag[ar[1, 8], ar[2, 7], ar[4, 5], ar[6, 3]]
105 Diag[ar[1, 8], ar[2, 7], ar[5, 4], ar[6, 3]]
106 Diag[ar[1, 8], ar[3, 5], ar[6, 4], ar[7, 2]]
107 Diag[ar[1, 8], ar[4, 6], ar[5, 3], ar[7, 2]]
108 Diag[ar[1, 8], ar[5, 3], ar[6, 4], ar[7, 2]]
109 Diag[ar[1, 8], ar[3, 6], ar[4, 5], ar[7, 2]]
```

```
110 Diag[ar[1, 8], ar[3, 6], ar[5, 4], ar[7, 2]]
111 Diag[ar[1, 8], ar[4, 5], ar[6, 3], ar[7, 2]]
112 Diag[ar[1, 8], ar[5, 4], ar[6, 3], ar[7, 2]]
113 Diag[ar[5, 2], ar[6, 4], ar[7, 3], ar[8, 1]]
114 Diag[ar[2, 6], ar[4, 7], ar[5, 3], ar[8, 1]]
115 Diag[ar[2, 6], ar[5, 3], ar[7, 4], ar[8, 1]]
116 Diag[ar[4, 3], ar[5, 7], ar[6, 2], ar[8, 1]]
117 Diag[ar[4, 3], ar[6, 2], ar[7, 5], ar[8, 1]]
118 Diag[ar[3, 5], ar[4, 7], ar[6, 2], ar[8, 1]]
119 Diag[ar[3, 5], ar[6, 2], ar[7, 4], ar[8, 1]]
120 Diag[ar[4, 7], ar[5, 3], ar[6, 2], ar[8, 1]]
121 Diag[ar[5, 3], ar[6, 2], ar[7, 4], ar[8, 1]]
122 Diag[ar[3, 7], ar[4, 5], ar[6, 2], ar[8, 1]]
123 Diag[ar[3, 7], ar[5, 4], ar[6, 2], ar[8, 1]]
124 Diag[ar[4, 5], ar[6, 2], ar[7, 3], ar[8, 1]]
125 Diag[ar[5, 4], ar[6, 2], ar[7, 3], ar[8, 1]]
126 Diag[ar[2, 7], ar[3, 5], ar[6, 4], ar[8, 1]]
127 Diag[ar[2, 7], ar[4, 6], ar[5, 3], ar[8, 1]]
128 Diag[ar[2, 7], ar[5, 3], ar[6, 4], ar[8, 1]]
129 Diag[ar[2, 7], ar[3, 6], ar[4, 5], ar[8, 1]]
130 Diag[ar[2, 7], ar[3, 6], ar[5, 4], ar[8, 1]]
131 Diag[ar[2, 7], ar[4, 5], ar[6, 3], ar[8, 1]]
132 Diag[ar[2, 7], ar[5, 4], ar[6, 3], ar[8, 1]]
133 Diag[ar[3, 5], ar[6, 4], ar[7, 2], ar[8, 1]]
134 Diag[ar[4, 6], ar[5, 3], ar[7, 2], ar[8, 1]]
135 Diag[ar[5, 3], ar[6, 4], ar[7, 2], ar[8, 1]]
136 Diag[ar[3, 6], ar[4, 5], ar[7, 2], ar[8, 1]]
137 Diag[ar[3, 6], ar[5, 4], ar[7, 2], ar[8, 1]]
138 Diag[ar[4, 5], ar[6, 3], ar[7, 2], ar[8, 1]]
139 Diag[ar[5, 4], ar[6, 3], ar[7, 2], ar[8, 1]]
140 Diag[ar[1, 2], ar[3, 4], ar[5, 6], ar[7, 8]]
141 Diag[ar[1, 2], ar[3, 8], ar[5, 4], ar[7, 6]]
142 Diag[ar[2, 1], ar[3, 7], ar[6, 4], ar[8, 5]]
143 Diag[ar[1, 3], ar[2, 6], ar[7, 5], ar[8, 4]]
144 Diag[ar[3, 1], ar[5, 2], ar[6, 4], ar[8, 7]]
```



```

145 Diag[ar[1, 4], ar[3, 2], ar[7, 5], ar[8, 6]]
146 Diag[ar[1, 4], ar[6, 5], ar[7, 3], ar[8, 2]]
147 Diag[ar[2, 8], ar[4, 1], ar[5, 3], ar[7, 6]]
148 Diag[ar[1, 5], ar[2, 7], ar[6, 3], ar[8, 4]]
149 Diag[ar[2, 6], ar[5, 1], ar[7, 4], ar[8, 3]]
150 Diag[ar[1, 6], ar[4, 2], ar[5, 3], ar[8, 7]]
151 Diag[ar[3, 2], ar[6, 1], ar[7, 4], ar[8, 5]]
152 Diag[ar[5, 4], ar[6, 1], ar[7, 3], ar[8, 2]]
153 Diag[ar[1, 7], ar[2, 8], ar[4, 3], ar[6, 5]]
154 Diag[ar[2, 6], ar[5, 3], ar[7, 1], ar[8, 4]]
155 Diag[ar[1, 8], ar[2, 5], ar[6, 4], ar[7, 3]]
156 Diag[ar[4, 2], ar[5, 3], ar[7, 6], ar[8, 1]]

SaveUSO[diag_Diag] := Module[
  {fname},
  fname = StringJoin[
    "USOFor",
    ToString[FromDigits[Cases[diag, _Integer, Infinity], sbase]],
    ".m"
  ];
  Print["Saving ", fname, " ..."];
  Put[{diag, USO[diag]}, fname];
]

base = 10

10

Load[diag_, type_String] := Module[
  {fstring},
  fstring = ToString[FromDigits[Cases[diag, _Integer, Infinity], base]];
  Print["Loading ", fstring, " ", type, " information ..."];
  Last@Get["U" <> type <> "For" <> fstring <> ".m"]
]

U[deg_, diag_] := Expand[Plus[
  Load[diag, "GL"] /. n^p_.*RW[l___] => EW[GL*n^p*FromDigits[{1}, base^2]] //.
  h[i_]^p_.EW[l_] => EW[h[i]^p l],
  Load[diag, "SO"] /. n^p_.*RSW[l___] => EW[SO*n^p*FromDigits[{1}, sbase^3]] //.
  h[i_]^p_.EW[l_] => EW[h[i]^p l],
  Coproduct[diag, 1] /. T[d1_, d2_] => Distribute[T[UGLnBiAlg[d1], UGLnBiAlg[d2]]] /.
  T[c_?NumberQ * a1_, a2_] => c*T[a1, a2] /.
  T[a1_, c_?NumberQ * a2_] => c*T[a1, a2] /. T[a1_, a2_] => EW[1, a1, a2],
  Coproduct[diag, 2] /. T[d1_, d2_] => Distribute[T[UGLnBiAlg[d1], UGLnBiAlg[d2]]] /.
  T[c_?NumberQ * a1_, a2_] => c*T[a1, a2] /.
  T[a1_, c_?NumberQ * a2_] => c*T[a1, a2] /. T[a1_, a2_] => EW[2, a1, a2]
]]

```

```

diags = Take[ds, All];
mat = {};
EWRules = {};
Do[
  Print[{i, diags[[i]], MaxMemoryUsed[], TimeUsed[]}];
  vect = U[4, diags[[i]] /. EWRules;
  Print["Length[vect] is ", Length[vect]];
  EWS = Union[Cases[vect, _EW, Infinity]];
  If[EWRules === {}, l = 0, l = Length[EWRules[[1]]]];
  Print["l is ", l];
  If[EWRules === {},
    EWRules = Dispatch[Thread[
      EWS → Table[v[j+1], {j, Length[EWS]}]
    ]],
    EWRules = Dispatch[Join[EWRules[[1]], Thread[
      EWS → Table[v[j+1], {j, Length[EWS]}]
    ]]]];
  l = Length[EWRules[[1]]];
  Print["l is ", l];
  AppendTo[mat,
    Replace[#, c_. * v[j_] ⇒ ({i, j} → c)] & /@ (List @@ vect /. EWRules)
  ],
  {i, Length[diags]}
];
mat = SparseArray[Flatten[mat], {Length[diags], l}];
Print["Computing Rank..."];
MatrixRank[mat]

{1, Diag[ar[5, 1], ar[6, 4], ar[7, 3], ar[8, 2]], 166 938 160, 168.846}
Loading 51647382 GL information ...
Loading 51647382 SO information ...
Length[vect] is 229 557
l is 0
l is 229 557
{2, Diag[ar[3, 2], ar[6, 1], ar[7, 5], ar[8, 4]], 298 599 944, 202.063}
Loading 32617584 GL information ...
Loading 32617584 SO information ...
Length[vect] is 226 821
l is 229 557
l is 230 327
{3, Diag[ar[4, 2], ar[6, 1], ar[7, 5], ar[8, 3]], 370 487 664, 235.386}
Loading 42617583 GL information ...
Loading 42617583 SO information ...
Length[vect] is 228 268

```

```
l is 230 327
l is 230 349
{4, Diag[ar[4, 7], ar[5, 2], ar[6, 1], ar[8, 3]], 415 665 760, 270.809}
Loading 47526183 GL information ...
Loading 47526183 SO information ...
Length[vect] is 236 059
l is 230 349
l is 240 161
{5, Diag[ar[5, 2], ar[6, 1], ar[7, 4], ar[8, 3]], 457 350 152, 310.741}
Loading 52617483 GL information ...
Loading 52617483 SO information ...
Length[vect] is 228 923
l is 240 161
l is 240 161
{6, Diag[ar[4, 3], ar[6, 1], ar[7, 5], ar[8, 2]], 497 782 832, 348.758}
Loading 43617582 GL information ...
Loading 43617582 SO information ...
Length[vect] is 230 046
l is 240 161
l is 240 161
{7, Diag[ar[4, 7], ar[5, 3], ar[6, 1], ar[8, 2]], 535 380 056, 388.541}
Loading 47536182 GL information ...
Loading 47536182 SO information ...
Length[vect] is 235 906
l is 240 161
l is 240 301
{8, Diag[ar[5, 3], ar[6, 1], ar[7, 4], ar[8, 2]], 573 673 744, 427.266}
Loading 53617482 GL information ...
Loading 53617482 SO information ...
Length[vect] is 228 281
l is 240 301
l is 240 301
{9, Diag[ar[4, 5], ar[6, 1], ar[7, 3], ar[8, 2]], 610 009 304, 467.391}
Loading 45617382 GL information ...
Loading 45617382 SO information ...
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Length[vect] is 228122
l is 240301
l is 240301
{10, Diag[ar[5, 4], ar[6, 1], ar[7, 3], ar[8, 2]], 647325816, 508.619}
Loading 54617382 GL information ...
Loading 54617382 SO information ...
Length[vect] is 229399
l is 240301
l is 240301
{11, Diag[ar[1, 7], ar[4, 2], ar[6, 3], ar[8, 5]], 684485984, 549.883}
Loading 17426385 GL information ...
Loading 17426385 SO information ...
Length[vect] is 238407
l is 240301
l is 240307
{12, Diag[ar[1, 7], ar[3, 6], ar[4, 8], ar[5, 2]], 724823440, 588.506}
Loading 17364852 GL information ...
Loading 17364852 SO information ...
Length[vect] is 194313
l is 240307
l is 240307
{13, Diag[ar[1, 7], ar[3, 6], ar[5, 2], ar[8, 4]], 748130344, 620.514}
Loading 17365284 GL information ...
Loading 17365284 SO information ...
Length[vect] is 230032
l is 240307
l is 240353
{14, Diag[ar[1, 7], ar[5, 2], ar[6, 3], ar[8, 4]], 791646200, 657.091}
Loading 17526384 GL information ...
Loading 17526384 SO information ...
Length[vect] is 238825
l is 240353
l is 240353
{15, Diag[ar[1, 7], ar[3, 8], ar[5, 2], ar[6, 4]], 833008520, 700.298}
Loading 17385264 GL information ...
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Loading 17385264 SO information ...
Length[vect] is 229753
l is 240353
l is 240353
{16, Diag[ar[1, 7], ar[5, 2], ar[6, 4], ar[8, 3]], 869198512, 741.58}
Loading 17526483 GL information ...
Loading 17526483 SO information ...
Length[vect] is 236472
l is 240353
l is 240353
{17, Diag[ar[1, 7], ar[2, 6], ar[5, 3], ar[8, 4]], 906855224, 777.605}
Loading 17265384 GL information ...
Loading 17265384 SO information ...
Length[vect] is 228653
l is 240353
l is 240353
{18, Diag[ar[1, 7], ar[4, 3], ar[6, 2], ar[8, 5]], 944378104, 818.963}
Loading 17436285 GL information ...
Loading 17436285 SO information ...
Length[vect] is 238660
l is 240353
l is 240353
{19, Diag[ar[1, 7], ar[3, 5], ar[4, 8], ar[6, 2]], 983989584, 858.336}
Loading 17354862 GL information ...
Loading 17354862 SO information ...
Length[vect] is 197458
l is 240353
l is 240353
{20, Diag[ar[1, 7], ar[3, 5], ar[6, 2], ar[8, 4]], 1008358344, 891.083}
Loading 17356284 GL information ...
Loading 17356284 SO information ...
Length[vect] is 230597
l is 240353
l is 240353
{21, Diag[ar[1, 7], ar[4, 8], ar[5, 3], ar[6, 2]], 1050900600, 928.319}
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Loading 17485362 GL information ...

Loading 17485362 SO information ...

Length[vect] is 228 696

1 is 240 353

1 is 240 353

{22, Diag[ar[1, 7], ar[5, 3], ar[6, 2], ar[8, 4]], 1 089 225 216, 969.441}

Loading 17536284 GL information ...

Loading 17536284 SO information ...

Length[vect] is 238 614

1 is 240 353

1 is 240 353

{23, Diag[ar[1, 7], ar[3, 8], ar[4, 5], ar[6, 2]], 1 128 944 016, 1013.24}

Loading 17384562 GL information ...

Loading 17384562 SO information ...

Length[vect] is 195 759

1 is 240 353

1 is 240 353

{24, Diag[ar[1, 7], ar[3, 8], ar[5, 4], ar[6, 2]], 1 152 566 824, 1045.89}

Loading 17385462 GL information ...

Loading 17385462 SO information ...

Length[vect] is 229 430

1 is 240 353

1 is 240 353

{25, Diag[ar[1, 7], ar[4, 5], ar[6, 2], ar[8, 3]], 1 195 417 064, 1086.46}

Loading 17456283 GL information ...

Loading 17456283 SO information ...

Length[vect] is 238 227

1 is 240 353

1 is 247 748

{26, Diag[ar[1, 7], ar[5, 4], ar[6, 2], ar[8, 3]], 1 234 534 680, 1130.18}

Loading 17546283 GL information ...

Loading 17546283 SO information ...

Length[vect] is 238 709

1 is 247 748

1 is 247 748

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{27, Diag[ar[1, 7], ar[2, 8], ar[5, 3], ar[6, 4]], 1278496888, 1171.63}
Loading 17285364 GL information ...
Loading 17285364 SO information ...
Length[vect] is 215398
l is 247748
l is 247748
{28, Diag[ar[1, 7], ar[2, 8], ar[5, 4], ar[6, 3]], 1307818416, 1206.54}
Loading 17285463 GL information ...
Loading 17285463 SO information ...
Length[vect] is 215565
l is 247748
l is 247748
{29, Diag[ar[1, 7], ar[3, 5], ar[6, 4], ar[8, 2]], 1341394888, 1241.88}
Loading 17356482 GL information ...
Loading 17356482 SO information ...
Length[vect] is 232356
l is 247748
l is 248915
{30, Diag[ar[1, 7], ar[4, 6], ar[5, 3], ar[8, 2]], 1379983160, 1291.93}
Loading 17465382 GL information ...
Loading 17465382 SO information ...
Length[vect] is 227032
l is 248915
l is 248915
{31, Diag[ar[1, 7], ar[5, 3], ar[6, 4], ar[8, 2]], 1416220928, 1328.47}
Loading 17536482 GL information ...
Loading 17536482 SO information ...
Length[vect] is 234919
l is 248915
l is 248915
{32, Diag[ar[1, 7], ar[5, 4], ar[6, 3], ar[8, 2]], 1458137984, 1371.35}
Loading 17546382 GL information ...
Loading 17546382 SO information ...
Length[vect] is 234819
l is 248915
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l is 248 915
{33, Diag[ar[3, 2], ar[4, 8], ar[6, 5], ar[7, 1]], 1 496 547 000, 1414.78}
Loading 32486571 GL information ...
Loading 32486571 SO information ...
Length[vect] is 255 635
l is 248 915
l is 261 165
{34, Diag[ar[3, 2], ar[6, 5], ar[7, 1], ar[8, 4]], 1 534 748 480, 1465.}
Loading 32657184 GL information ...
Loading 32657184 SO information ...
Length[vect] is 226 285
l is 261 165
l is 261 165
{35, Diag[ar[4, 2], ar[5, 3], ar[6, 8], ar[7, 1]], 1 577 922 768, 1505.72}
Loading 42536871 GL information ...
Loading 42536871 SO information ...
Length[vect] is 251 164
l is 261 165
l is 261 165
{36, Diag[ar[4, 2], ar[5, 3], ar[7, 1], ar[8, 6]], 1 616 396 008, 1561.29}
Loading 42537186 GL information ...
Loading 42537186 SO information ...
Length[vect] is 231 989
l is 261 165
l is 261 491
{37, Diag[ar[4, 2], ar[5, 8], ar[6, 3], ar[7, 1]], 1 653 683 808, 1613.07}
Loading 42586371 GL information ...
Loading 42586371 SO information ...
Length[vect] is 257 816
l is 261 491
l is 261 568
{38, Diag[ar[4, 2], ar[6, 3], ar[7, 1], ar[8, 5]], 1 697 375 648, 1666.03}
Loading 42637185 GL information ...
Loading 42637185 SO information ...
Length[vect] is 224 657
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l is 261568
l is 261568
{39, Diag[ar[2, 5], ar[4, 8], ar[6, 3], ar[7, 1]], 1734514728, 1703.48}
Loading 25486371 GL information ...
Loading 25486371 SO information ...
Length[vect] is 239409
l is 261568
l is 261568
{40, Diag[ar[2, 5], ar[6, 3], ar[7, 1], ar[8, 4]], 1774262336, 1753.38}
Loading 25637184 GL information ...
Loading 25637184 SO information ...
Length[vect] is 246670
l is 261568
l is 261594
{41, Diag[ar[3, 4], ar[5, 2], ar[6, 8], ar[7, 1]], 1815268776, 1805.85}
Loading 34526871 GL information ...
Loading 34526871 SO information ...
Length[vect] is 242033
l is 261594
l is 261730
{42, Diag[ar[3, 4], ar[5, 2], ar[7, 1], ar[8, 6]], 1851674728, 1854.18}
Loading 34527186 GL information ...
Loading 34527186 SO information ...
Length[vect] is 244467
l is 261730
l is 261730
{43, Diag[ar[4, 3], ar[5, 2], ar[6, 8], ar[7, 1]], 1889353208, 1901.54}
Loading 43526871 GL information ...
Loading 43526871 SO information ...
Length[vect] is 250907
l is 261730
l is 261730
{44, Diag[ar[4, 3], ar[5, 2], ar[7, 1], ar[8, 6]], 1933353544, 1955.17}
Loading 43527186 GL information ...
Loading 43527186 SO information ...

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Length[vect] is 234895
l is 261730
l is 261730
{45, Diag[ar[3, 6], ar[4, 8], ar[5, 2], ar[7, 1]], 1971015008, 2008.41}
Loading 36485271 GL information ...
Loading 36485271 SO information ...
Length[vect] is 230616
l is 261730
l is 261730
{46, Diag[ar[3, 6], ar[5, 2], ar[7, 1], ar[8, 4]], 2012311728, 2054.27}
Loading 36527184 GL information ...
Loading 36527184 SO information ...
Length[vect] is 230394
l is 261730
l is 261730
{47, Diag[ar[4, 8], ar[5, 2], ar[6, 3], ar[7, 1]], 2048536808, 2096.07}
Loading 48526371 GL information ...
Loading 48526371 SO information ...
Length[vect] is 247624
l is 261730
l is 261730
{48, Diag[ar[5, 2], ar[6, 3], ar[7, 1], ar[8, 4]], 2089732304, 2154.5}
Loading 52637184 GL information ...
Loading 52637184 SO information ...
Length[vect] is 230089
l is 261730
l is 261730
{49, Diag[ar[3, 8], ar[4, 6], ar[5, 2], ar[7, 1]], 2127461872, 2200.36}
Loading 38465271 GL information ...
Loading 38465271 SO information ...
Length[vect] is 237830
l is 261730
l is 261730
{50, Diag[ar[3, 8], ar[5, 2], ar[6, 4], ar[7, 1]], 2164220560, 2253.45}
Loading 38526471 GL information ...
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Loading 38526471 SO information ...
Length[vect] is 235282
l is 261730
l is 261730
{51, Diag[ar[4, 6], ar[5, 2], ar[7, 1], ar[8, 3]], 2203493776, 2293.62}
Loading 46527183 GL information ...
Loading 46527183 SO information ...
Length[vect] is 237253
l is 261730
l is 261730
{52, Diag[ar[5, 2], ar[6, 4], ar[7, 1], ar[8, 3]], 2242673144, 2331.}
Loading 52647183 GL information ...
Loading 52647183 SO information ...
Length[vect] is 228279
l is 261730
l is 261730
{53, Diag[ar[2, 6], ar[4, 3], ar[5, 8], ar[7, 1]], 2277714120, 2373.64}
Loading 26435871 GL information ...
Loading 26435871 SO information ...
Length[vect] is 248167
l is 261730
l is 261730
{54, Diag[ar[2, 6], ar[4, 3], ar[7, 1], ar[8, 5]], 2317083400, 2425.75}
Loading 26437185 GL information ...
Loading 26437185 SO information ...
Length[vect] is 247023
l is 261730
l is 261730
{55, Diag[ar[2, 6], ar[3, 5], ar[4, 8], ar[7, 1]], 2360576032, 2466.83}
Loading 26354871 GL information ...
Loading 26354871 SO information ...
Length[vect] is 201897
l is 261730
l is 261730
{56, Diag[ar[2, 6], ar[3, 5], ar[7, 1], ar[8, 4]], 2386100072, 2513.84}
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Loading 26357184 GL information ...
Loading 26357184 SO information ...
Length[vect] is 237597
1 is 261730
1 is 261730
{57, Diag[ar[2, 6], ar[4, 8], ar[5, 3], ar[7, 1]], 2429495248, 2556.58}
Loading 26485371 GL information ...
Loading 26485371 SO information ...
Length[vect] is 234555
1 is 261730
1 is 261730
{58, Diag[ar[2, 6], ar[5, 3], ar[7, 1], ar[8, 4]], 2468918320, 2595.54}
Loading 26537184 GL information ...
Loading 26537184 SO information ...
Length[vect] is 247470
1 is 261730
1 is 261730
{59, Diag[ar[2, 6], ar[3, 8], ar[5, 4], ar[7, 1]], 2509791928, 2636.85}
Loading 26385471 GL information ...
Loading 26385471 SO information ...
Length[vect] is 236177
1 is 261730
1 is 261730
{60, Diag[ar[2, 6], ar[4, 5], ar[7, 1], ar[8, 3]], 2548430800, 2676.33}
Loading 26457183 GL information ...
Loading 26457183 SO information ...
Length[vect] is 234813
1 is 261730
1 is 261730
{61, Diag[ar[2, 6], ar[5, 4], ar[7, 1], ar[8, 3]], 2585320592, 2719.58}
Loading 26547183 GL information ...
Loading 26547183 SO information ...
Length[vect] is 246840
1 is 261730
1 is 261730
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{62, Diag[ar[4, 3], ar[5, 8], ar[6, 2], ar[7, 1]], 2625831392, 2761.}
Loading 43586271 GL information ...
Loading 43586271 SO information ...
Length[vect] is 258557
l is 261730
l is 261730
{63, Diag[ar[4, 3], ar[6, 2], ar[7, 1], ar[8, 5]], 2666347168, 2807.31}
Loading 43627185 GL information ...
Loading 43627185 SO information ...
Length[vect] is 229911
l is 261730
l is 261730
{64, Diag[ar[3, 5], ar[4, 8], ar[6, 2], ar[7, 1]], 2705430664, 2850.54}
Loading 35486271 GL information ...
Loading 35486271 SO information ...
Length[vect] is 230777
l is 261730
l is 261730
{65, Diag[ar[3, 5], ar[6, 2], ar[7, 1], ar[8, 4]], 2742614608, 2893.84}
Loading 35627184 GL information ...
Loading 35627184 SO information ...
Length[vect] is 238964
l is 261730
l is 261730
{66, Diag[ar[4, 8], ar[5, 3], ar[6, 2], ar[7, 1]], 2782322000, 2938.99}
Loading 48536271 GL information ...
Loading 48536271 SO information ...
Length[vect] is 237548
l is 261730
l is 261730
{67, Diag[ar[5, 3], ar[6, 2], ar[7, 1], ar[8, 4]], 2821201096, 2982.86}
Loading 53627184 GL information ...
Loading 53627184 SO information ...
Length[vect] is 229572
l is 261730
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l is 261730
{68, Diag[ar[3, 8], ar[4, 5], ar[6, 2], ar[7, 1]], 2856473680, 3025.32}
Loading 38456271 GL information ...
Loading 38456271 SO information ...
Length[vect] is 230480
l is 261730
l is 261730
{69, Diag[ar[3, 8], ar[5, 4], ar[6, 2], ar[7, 1]], 2894321496, 3068.11}
Loading 38546271 GL information ...
Loading 38546271 SO information ...
Length[vect] is 238260
l is 261730
l is 261730
{70, Diag[ar[4, 5], ar[6, 2], ar[7, 1], ar[8, 3]], 2933777960, 3113.32}
Loading 45627183 GL information ...
Loading 45627183 SO information ...
Length[vect] is 228182
l is 261730
l is 261730
{71, Diag[ar[5, 4], ar[6, 2], ar[7, 1], ar[8, 3]], 2969112864, 3157.3}
Loading 54627183 GL information ...
Loading 54627183 SO information ...
Length[vect] is 229402
l is 261730
l is 261730
{72, Diag[ar[2, 8], ar[3, 5], ar[6, 4], ar[7, 1]], 3005800952, 3200.34}
Loading 28356471 GL information ...
Loading 28356471 SO information ...
Length[vect] is 227956
l is 261730
l is 261730
{73, Diag[ar[2, 8], ar[4, 6], ar[5, 3], ar[7, 1]], 3038381784, 3235.51}
Loading 28465371 GL information ...
Loading 28465371 SO information ...
Length[vect] is 226838
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l is 261730
l is 261730
{74, Diag[ar[2, 8], ar[5, 3], ar[6, 4], ar[7, 1]], 3077988176, 3274.29}
Loading 28536471 GL information ...
Loading 28536471 SO information ...
Length[vect] is 234818
l is 261730
l is 261730
{75, Diag[ar[2, 8], ar[3, 6], ar[4, 5], ar[7, 1]], 3116805592, 3315.66}
Loading 28364571 GL information ...
Loading 28364571 SO information ...
Length[vect] is 198151
l is 261730
l is 261730
{76, Diag[ar[2, 8], ar[3, 6], ar[5, 4], ar[7, 1]], 3140820368, 3362.39}
Loading 28365471 GL information ...
Loading 28365471 SO information ...
Length[vect] is 232043
l is 261730
l is 261730
{77, Diag[ar[2, 8], ar[4, 5], ar[6, 3], ar[7, 1]], 3183405712, 3397.45}
Loading 28456371 GL information ...
Loading 28456371 SO information ...
Length[vect] is 227174
l is 261730
l is 261730
{78, Diag[ar[2, 8], ar[5, 4], ar[6, 3], ar[7, 1]], 3222171392, 3432.8}
Loading 28546371 GL information ...
Loading 28546371 SO information ...
Length[vect] is 234805
l is 261730
l is 261730
{79, Diag[ar[3, 5], ar[6, 4], ar[7, 1], ar[8, 2]], 3260855024, 3474.5}
Loading 35647182 GL information ...
Loading 35647182 SO information ...
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Length[vect] is 243387
l is 261730
l is 261730
{80, Diag[ar[4, 6], ar[5, 3], ar[7, 1], ar[8, 2]], 3299418616, 3517.18}
Loading 46537182 GL information ...
Loading 46537182 SO information ...
Length[vect] is 235111
l is 261730
l is 261730
{81, Diag[ar[5, 3], ar[6, 4], ar[7, 1], ar[8, 2]], 3339122776, 3559.25}
Loading 53647182 GL information ...
Loading 53647182 SO information ...
Length[vect] is 224402
l is 261730
l is 261730
{82, Diag[ar[3, 6], ar[4, 5], ar[7, 1], ar[8, 2]], 3371980896, 3595.26}
Loading 36457182 GL information ...
Loading 36457182 SO information ...
Length[vect] is 221364
l is 261730
l is 261730
{83, Diag[ar[3, 6], ar[5, 4], ar[7, 1], ar[8, 2]], 3406136104, 3630.11}
Loading 36547182 GL information ...
Loading 36547182 SO information ...
Length[vect] is 231326
l is 261730
l is 261730
{84, Diag[ar[4, 5], ar[6, 3], ar[7, 1], ar[8, 2]], 3443133632, 3667.71}
Loading 45637182 GL information ...
Loading 45637182 SO information ...
Length[vect] is 224314
l is 261730
l is 261730
{85, Diag[ar[5, 4], ar[6, 3], ar[7, 1], ar[8, 2]], 3481288680, 3705.11}
Loading 54637182 GL information ...
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Loading 54637182 SO information ...
Length[vect] is 224838
l is 261730
l is 261730
{86, Diag[ar[1, 8], ar[5, 2], ar[6, 4], ar[7, 3]], 3517014112, 3741.45}
Loading 18526473 GL information ...
Loading 18526473 SO information ...
Length[vect] is 227110
l is 261730
l is 261730
{87, Diag[ar[1, 8], ar[2, 6], ar[4, 7], ar[5, 3]], 3555846864, 3785.28}
Loading 18264753 GL information ...
Loading 18264753 SO information ...
Length[vect] is 194985
l is 261730
l is 261730
{88, Diag[ar[1, 8], ar[2, 6], ar[5, 3], ar[7, 4]], 3580707192, 3833.51}
Loading 18265374 GL information ...
Loading 18265374 SO information ...
Length[vect] is 235584
l is 261730
l is 261730
{89, Diag[ar[1, 8], ar[4, 3], ar[5, 7], ar[6, 2]], 3624636760, 3875.42}
Loading 18435762 GL information ...
Loading 18435762 SO information ...
Length[vect] is 243571
l is 261730
l is 261730
{90, Diag[ar[1, 8], ar[4, 3], ar[6, 2], ar[7, 5]], 3662626800, 3927.85}
Loading 18436275 GL information ...
Loading 18436275 SO information ...
Length[vect] is 232943
l is 261730
l is 261730
{91, Diag[ar[1, 8], ar[3, 5], ar[4, 7], ar[6, 2]], 3701073400, 3980.29}
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Loading 18354762 GL information ...
Loading 18354762 SO information ...
Length[vect] is 197778
1 is 261730
1 is 261730
{92, Diag[ar[1, 8], ar[3, 5], ar[6, 2], ar[7, 4]], 3729683864, 4017.85}
Loading 18356274 GL information ...
Loading 18356274 SO information ...
Length[vect] is 237452
1 is 261730
1 is 261730
{93, Diag[ar[1, 8], ar[4, 7], ar[5, 3], ar[6, 2]], 3773164416, 4064.36}
Loading 18475362 GL information ...
Loading 18475362 SO information ...
Length[vect] is 227738
1 is 261730
1 is 261730
{94, Diag[ar[1, 8], ar[5, 3], ar[6, 2], ar[7, 4]], 3812409080, 4114.26}
Loading 18536274 GL information ...
Loading 18536274 SO information ...
Length[vect] is 227147
1 is 261730
1 is 261730
{95, Diag[ar[1, 8], ar[3, 7], ar[4, 5], ar[6, 2]], 3847735336, 4165.66}
Loading 18374562 GL information ...
Loading 18374562 SO information ...
Length[vect] is 195355
1 is 261730
1 is 261730
{96, Diag[ar[1, 8], ar[3, 7], ar[5, 4], ar[6, 2]], 3871874624, 4201.62}
Loading 18375462 GL information ...
Loading 18375462 SO information ...
Length[vect] is 226283
1 is 261730
1 is 261730
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{97, Diag[ar[1, 8], ar[4, 5], ar[6, 2], ar[7, 3]], 3914104776, 4246.02}
Loading 18456273 GL information ...
Loading 18456273 SO information ...
Length[vect] is 215815
l is 261730
l is 261730
{98, Diag[ar[1, 8], ar[5, 4], ar[6, 2], ar[7, 3]], 3947608808, 4281.55}
Loading 18546273 GL information ...
Loading 18546273 SO information ...
Length[vect] is 223766
l is 261730
l is 261730
{99, Diag[ar[1, 8], ar[2, 7], ar[3, 5], ar[6, 4]], 3984213944, 4318.98}
Loading 18273564 GL information ...
Loading 18273564 SO information ...
Length[vect] is 193198
l is 261730
l is 261730
{100, Diag[ar[1, 8], ar[2, 7], ar[4, 6], ar[5, 3]], 4008657232, 4352.91}
Loading 18274653 GL information ...
Loading 18274653 SO information ...
Length[vect] is 190681
l is 261730
l is 261730
{101, Diag[ar[1, 8], ar[2, 7], ar[5, 3], ar[6, 4]], 4038328648, 4386.84}
Loading 18275364 GL information ...
Loading 18275364 SO information ...
Length[vect] is 215086
l is 261730
l is 261730
{102, Diag[ar[1, 8], ar[2, 7], ar[3, 6], ar[4, 5]], 4078856328, 4420.05}
Loading 18273645 GL information ...
Loading 18273645 SO information ...
Length[vect] is 91205
l is 261730
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l is 261730
{103, Diag[ar[1, 8], ar[2, 7], ar[3, 6], ar[5, 4]], 4078856328, 4435.68}
Loading 18273654 GL information ...
Loading 18273654 SO information ...
Length[vect] is 182814
l is 261730
l is 261730
{104, Diag[ar[1, 8], ar[2, 7], ar[4, 5], ar[6, 3]], 4110244680, 4464.59}
Loading 18274563 GL information ...
Loading 18274563 SO information ...
Length[vect] is 186976
l is 261730
l is 261730
{105, Diag[ar[1, 8], ar[2, 7], ar[5, 4], ar[6, 3]], 4146049344, 4493.85}
Loading 18275463 GL information ...
Loading 18275463 SO information ...
Length[vect] is 215293
l is 261730
l is 261730
{106, Diag[ar[1, 8], ar[3, 5], ar[6, 4], ar[7, 2]], 4187901296, 4526.62}
Loading 18356472 GL information ...
Loading 18356472 SO information ...
Length[vect] is 234662
l is 261730
l is 261730
{107, Diag[ar[1, 8], ar[4, 6], ar[5, 3], ar[7, 2]], 4228306856, 4562.2}
Loading 18465372 GL information ...
Loading 18465372 SO information ...
Length[vect] is 227421
l is 261730
l is 261730
{108, Diag[ar[1, 8], ar[5, 3], ar[6, 4], ar[7, 2]], 4266919384, 4597.62}
Loading 18536472 GL information ...
Loading 18536472 SO information ...
Length[vect] is 223897
```

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l is 261730
l is 261730
{109, Diag[ar[1, 8], ar[3, 6], ar[4, 5], ar[7, 2]], 4301151536, 4635.11}
Loading 18364572 GL information ...
Loading 18364572 SO information ...
Length[vect] is 190262
l is 261730
l is 261730
{110, Diag[ar[1, 8], ar[3, 6], ar[5, 4], ar[7, 2]], 4323647824, 4666.06}
Loading 18365472 GL information ...
Loading 18365472 SO information ...
Length[vect] is 220577
l is 261730
l is 261730
{111, Diag[ar[1, 8], ar[4, 5], ar[6, 3], ar[7, 2]], 4363855664, 4701.34}
Loading 18456372 GL information ...
Loading 18456372 SO information ...
Length[vect] is 217434
l is 261730
l is 261730
{112, Diag[ar[1, 8], ar[5, 4], ar[6, 3], ar[7, 2]], 4401370336, 4736.81}
Loading 18546372 GL information ...
Loading 18546372 SO information ...
Length[vect] is 223778
l is 261730
l is 261730
{113, Diag[ar[5, 2], ar[6, 4], ar[7, 3], ar[8, 1]], 4437910952, 4773.21}
Loading 52647381 GL information ...
Loading 52647381 SO information ...
Length[vect] is 229519
l is 261730
l is 261730
{114, Diag[ar[2, 6], ar[4, 7], ar[5, 3], ar[8, 1]], 4477615976, 4818.29}
Loading 26475381 GL information ...
Loading 26475381 SO information ...
```

```
Length[vect] is 238657
1 is 261730
1 is 261730
{115, Diag[ar[2, 6], ar[5, 3], ar[7, 4], ar[8, 1]], 4516523368, 4880.67}
Loading 26537481 GL information ...
Loading 26537481 SO information ...
Length[vect] is 248403
1 is 261730
1 is 261730
{116, Diag[ar[4, 3], ar[5, 7], ar[6, 2], ar[8, 1]], 4558148416, 4925.53}
Loading 43576281 GL information ...
Loading 43576281 SO information ...
Length[vect] is 255920
1 is 261730
1 is 261730
{117, Diag[ar[4, 3], ar[6, 2], ar[7, 5], ar[8, 1]], 4596318528, 4991.99}
Loading 43627581 GL information ...
Loading 43627581 SO information ...
Length[vect] is 223233
1 is 261730
1 is 261730
{118, Diag[ar[3, 5], ar[4, 7], ar[6, 2], ar[8, 1]], 4632911960, 5033.9}
Loading 35476281 GL information ...
Loading 35476281 SO information ...
Length[vect] is 237896
1 is 261730
1 is 261730
{119, Diag[ar[3, 5], ar[6, 2], ar[7, 4], ar[8, 1]], 4673099384, 5082.06}
Loading 35627481 GL information ...
Loading 35627481 SO information ...
Length[vect] is 247885
1 is 261730
1 is 261730
{120, Diag[ar[4, 7], ar[5, 3], ar[6, 2], ar[8, 1]], 4714459912, 5127.08}
Loading 47536281 GL information ...
```

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Loading 47536281 SO information ...
Length[vect] is 238746
1 is 261730
1 is 261730
{121, Diag[ar[5, 3], ar[6, 2], ar[7, 4], ar[8, 1]], 4755034472, 5176.89}
Loading 53627481 GL information ...
Loading 53627481 SO information ...
Length[vect] is 229553
1 is 261730
1 is 261730
{122, Diag[ar[3, 7], ar[4, 5], ar[6, 2], ar[8, 1]], 4789676528, 5224.36}
Loading 37456281 GL information ...
Loading 37456281 SO information ...
Length[vect] is 234488
1 is 261730
1 is 261730
{123, Diag[ar[3, 7], ar[5, 4], ar[6, 2], ar[8, 1]], 4825349056, 5268.73}
Loading 37546281 GL information ...
Loading 37546281 SO information ...
Length[vect] is 244307
1 is 261730
1 is 261730
{124, Diag[ar[4, 5], ar[6, 2], ar[7, 3], ar[8, 1]], 4865868648, 5310.27}
Loading 45627381 GL information ...
Loading 45627381 SO information ...
Length[vect] is 224382
1 is 261730
1 is 261730
{125, Diag[ar[5, 4], ar[6, 2], ar[7, 3], ar[8, 1]], 4901334688, 5350.66}
Loading 54627381 GL information ...
Loading 54627381 SO information ...
Length[vect] is 224770
1 is 261730
1 is 261730
{126, Diag[ar[2, 7], ar[3, 5], ar[6, 4], ar[8, 1]], 4936471704, 5390.54}

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Loading 27356481 GL information ...
Loading 27356481 SO information ...
Length[vect] is 227 613
1 is 261 730
1 is 261 730
{127, Diag[ar[2, 7], ar[4, 6], ar[5, 3], ar[8, 1]], 4 974 704 624, 5429.59}
Loading 27465381 GL information ...
Loading 27465381 SO information ...
Length[vect] is 235 099
1 is 261 730
1 is 261 730
{128, Diag[ar[2, 7], ar[5, 3], ar[6, 4], ar[8, 1]], 5 011 315 784, 5469.84}
Loading 27536481 GL information ...
Loading 27536481 SO information ...
Length[vect] is 232 218
1 is 261 730
1 is 261 730
{129, Diag[ar[2, 7], ar[3, 6], ar[4, 5], ar[8, 1]], 5 047 580 792, 5511.09}
Loading 27364581 GL information ...
Loading 27364581 SO information ...
Length[vect] is 186 423
1 is 261 730
1 is 261 730
{130, Diag[ar[2, 7], ar[3, 6], ar[5, 4], ar[8, 1]], 5 071 557 744, 5543.57}
Loading 27365481 GL information ...
Loading 27365481 SO information ...
Length[vect] is 223 822
1 is 261 730
1 is 261 730
{131, Diag[ar[2, 7], ar[4, 5], ar[6, 3], ar[8, 1]], 5 111 276 920, 5581.88}
Loading 27456381 GL information ...
Loading 27456381 SO information ...
Length[vect] is 225 186
1 is 261 730
1 is 261 730
```



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{132, Diag[ar[2, 7], ar[5, 4], ar[6, 3], ar[8, 1]], 5148999656, 5620.73}
Loading 27546381 GL information ...
Loading 27546381 SO information ...
Length[vect] is 232394
l is 261730
l is 261730
{133, Diag[ar[3, 5], ar[6, 4], ar[7, 2], ar[8, 1]], 5187209976, 5661.19}
Loading 35647281 GL information ...
Loading 35647281 SO information ...
Length[vect] is 244289
l is 261730
l is 261730
{134, Diag[ar[4, 6], ar[5, 3], ar[7, 2], ar[8, 1]], 5229782600, 5707.28}
Loading 46537281 GL information ...
Loading 46537281 SO information ...
Length[vect] is 236017
l is 261730
l is 261730
{135, Diag[ar[5, 3], ar[6, 4], ar[7, 2], ar[8, 1]], 5269748416, 5753.8}
Loading 53647281 GL information ...
Loading 53647281 SO information ...
Length[vect] is 224697
l is 261730
l is 261730
{136, Diag[ar[3, 6], ar[4, 5], ar[7, 2], ar[8, 1]], 5302661624, 5793.29}
Loading 36457281 GL information ...
Loading 36457281 SO information ...
Length[vect] is 221470
l is 261730
l is 261730
{137, Diag[ar[3, 6], ar[5, 4], ar[7, 2], ar[8, 1]], 5336628360, 5831.24}
Loading 36547281 GL information ...
Loading 36547281 SO information ...
Length[vect] is 232440
l is 261730
```

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l is 261730
{138, Diag[ar[4, 5], ar[6, 3], ar[7, 2], ar[8, 1]], 5373902936, 5872.22}
Loading 45637281 GL information ...
Loading 45637281 SO information ...
Length[vect] is 222965
l is 261730
l is 261730
{139, Diag[ar[5, 4], ar[6, 3], ar[7, 2], ar[8, 1]], 5411466624, 5910.78}
Loading 54637281 GL information ...
Loading 54637281 SO information ...
Length[vect] is 221530
l is 261730
l is 261730
{140, Diag[ar[1, 2], ar[3, 4], ar[5, 6], ar[7, 8]], 5445730808, 5948.05}
Loading 12345678 GL information ...
Loading 12345678 SO information ...
Length[vect] is 95791
l is 261730
l is 262514
{141, Diag[ar[1, 2], ar[3, 8], ar[5, 4], ar[7, 6]], 5445730808, 5989.55}
Loading 12385476 GL information ...
Loading 12385476 SO information ...
Length[vect] is 218672
l is 262514
l is 262514
{142, Diag[ar[2, 1], ar[3, 7], ar[6, 4], ar[8, 5]], 5489707544, 6053.27}
Loading 21376485 GL information ...
Loading 21376485 SO information ...
Length[vect] is 258615
l is 262514
l is 262514
{143, Diag[ar[1, 3], ar[2, 6], ar[7, 5], ar[8, 4]], 5541176648, 6126.37}
Loading 13267584 GL information ...
Loading 13267584 SO information ...
Length[vect] is 237203
```

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l is 262514
l is 263330
{144, Diag[ar[3, 1], ar[5, 2], ar[6, 4], ar[8, 7]], 5582810912, 6202.54}
Loading 31526487 GL information ...
Loading 31526487 SO information ...
Length[vect] is 237093
l is 263330
l is 263330
{145, Diag[ar[1, 4], ar[3, 2], ar[7, 5], ar[8, 6]], 5619409528, 6277.37}
Loading 14327586 GL information ...
Loading 14327586 SO information ...
Length[vect] is 234595
l is 263330
l is 263330
{146, Diag[ar[1, 4], ar[6, 5], ar[7, 3], ar[8, 2]], 5655259128, 6346.12}
Loading 14657382 GL information ...
Loading 14657382 SO information ...
Length[vect] is 254264
l is 263330
l is 263330
{147, Diag[ar[2, 8], ar[4, 1], ar[5, 3], ar[7, 6]], 5700369128, 6423.11}
Loading 28415376 GL information ...
Loading 28415376 SO information ...
Length[vect] is 247640
l is 263330
l is 263330
{148, Diag[ar[1, 5], ar[2, 7], ar[6, 3], ar[8, 4]], 5743150368, 6495.54}
Loading 15276384 GL information ...
Loading 15276384 SO information ...
Length[vect] is 232573
l is 263330
l is 263330
{149, Diag[ar[2, 6], ar[5, 1], ar[7, 4], ar[8, 3]], 5778760480, 6567.48}
Loading 26517483 GL information ...
Loading 26517483 SO information ...

```

```
Length[vect] is 245819
l is 263330
l is 263330
{150, Diag[ar[1, 6], ar[4, 2], ar[5, 3], ar[8, 7]], 5819676112, 6618.78}
Loading 16425387 GL information ...
Loading 16425387 SO information ...
Length[vect] is 242711
l is 263330
l is 263330
{151, Diag[ar[3, 2], ar[6, 1], ar[7, 4], ar[8, 5]], 5854119304, 6660.61}
Loading 32617485 GL information ...
Loading 32617485 SO information ...
Length[vect] is 238598
l is 263330
l is 263330
{152, Diag[ar[5, 4], ar[6, 1], ar[7, 3], ar[8, 2]], 5896750976, 6710.16}
Loading 54617382 GL information ...
Loading 54617382 SO information ...
Length[vect] is 229399
l is 263330
l is 263330
{153, Diag[ar[1, 7], ar[2, 8], ar[4, 3], ar[6, 5]], 5934931992, 6758.27}
Loading 17284365 GL information ...
Loading 17284365 SO information ...
Length[vect] is 217400
l is 263330
l is 263330
{154, Diag[ar[2, 6], ar[5, 3], ar[7, 1], ar[8, 4]], 5965359528, 6795.5}
Loading 26537184 GL information ...
Loading 26537184 SO information ...
Length[vect] is 247470
l is 263330
l is 263330
{155, Diag[ar[1, 8], ar[2, 5], ar[6, 4], ar[7, 3]], 6010064992, 6840.62}
Loading 18256473 GL information ...
```

```
Loading 18256473 SO information ...
Length[vect] is 232732
1 is 263330
1 is 263330
{156, Diag[ar[4, 2], ar[5, 3], ar[7, 6], ar[8, 1]], 6048019272, 6888.23}
Loading 42537681 GL information ...
Loading 42537681 SO information ...
Length[vect] is 233356
1 is 263330
1 is 263330
Computing Rank...
123
U[4, ds[[1]]]
```

```

Loading 51647382 GL information ...
Loading 51647382 SO information ...
Computing OrderTypes[2, {{1, 2}}]
Computing OrderTypes[3, {{2, 3}}]
Computing OrderTypes[4, {{3, 4}}]
Computing OrderTypes[5, {{2, 3}, {4, 5}}]
Computing OrderTypes[5, {{4, 5}}]
Computing OrderTypes[6, {{1, 2}, {3, 4}, {5, 6}}]
Computing OrderTypes[6, {{3, 4}, {5, 6}}]
Computing OrderTypes[6, {{5, 6}}]
Computing OrderTypes[4, {{1, 2}, {3, 4}}]

```

A very large output was generated. Here is a sample of it:

$$\begin{aligned}
& \frac{EW[0]}{8} + \frac{1}{16} EW[1\ 111\ 111\ 111\ 111\ 111\ 111\ 111\ GL\ n] + 56 EW[11\ GL\ n^2] - 56 EW[22\ GL\ n^2] + \frac{159}{2} EW[1111\ GL\ n^2] - \\
& 159 EW[1122\ GL\ n^2] + \frac{159}{2} EW[2222\ GL\ n^2] + 10 EW[111\ 111\ GL\ n^2] - 57 EW[111\ 122\ GL\ n^2] - \\
& \frac{127}{2} EW[111\ 221\ GL\ n^2] + \ll 343\ 654 \gg + 24 EW[2, n^4 RW[14, 23, 32, 41], n^3 RW[12, 13, 21, 31]] + \\
& 12 EW[2, n^4 RW[14, 23, 32, 41], n^2 RW[12, 21, 22, 22]] + \\
& 24 EW[2, n^4 RW[14, 23, 32, 41], n^3 RW[12, 21, 23, 32]] + \\
& 12 EW[2, n^4 RW[14, 23, 32, 41], n^3 RW[12, 21, 33, 33]] + \\
& 24 EW[2, n^4 RW[14, 23, 32, 41], n^4 RW[12, 21, 34, 43]] + \\
& 12 EW[2, n^4 RW[14, 23, 32, 41], n^3 RW[13, 22, 22, 31]] + \\
& 24 EW[2, n^4 RW[14, 23, 32, 41], n^3 RW[13, 23, 31, 32]] + \\
& 24 EW[2, n^4 RW[14, 23, 32, 41], n^4 RW[13, 24, 31, 42]] + \\
& 24 EW[2, n^4 RW[14, 23, 32, 41], n^4 RW[14, 23, 32, 41]]
\end{aligned}$$

Show Less

Show More

Show Full Output

Set Size Limit...

base = 10

10

Load[ds[[1]], "GL"]

```

Loading 51647382 GL information ...

```

```
Load[ds[[1]], "GL"] /. n^p_.*RW[l____] => EW[GL*n^p*FromDigits[{1}, base^2]] //.
h[i_]^p_.*EW[l_] => EW[h[i]^p]
```

Loading 51647382 GL information ...

A very large output was generated. Here is a sample of it:

$$\frac{EW[0]}{16} + \frac{1}{16} EW[1\ 111\ 111\ 111\ 111\ 111\ 111\ 111\ GL\ n] + 56 EW[11\ GL\ n^2] -$$

$$56 EW[22\ GL\ n^2] + \frac{159}{2} EW[1111\ GL\ n^2] - 159 EW[1122\ GL\ n^2] + \ll 69\ 759 \gg$$

Show Less

Show More

Show Full Output

Set Size Limit..

```
 $\frac{1}{16} n h[1]^2 RW[] /. n^p_.*RW[l____] => EW[GL*n^p*FromDigits[{1}, base^2]] //.$ 
h[i_]^p_.*EW[l_] => EW[h[i]^p]
```

$$\frac{EW[0]}{16}$$

```
56 n^2 RW[11] /. n^p_.*RW[l____] => EW[GL*n^p*FromDigits[{1}, base^2]] //.
h[i_]^p_.*EW[l_] => EW[h[i]^p]
```

$$56 EW[11\ GL\ n^2]$$

```
Last[Load[ds[[1]], "GL"] ]
```

Loading 51647382 GL information ...

$$24 n^8 RW[18, 27, 36, 45, 54, 63, 72, 81]$$

```
24 n^8 RW[18, 27, 36, 45, 54, 63, 72, 81] /. n^p_.*RW[l____] =>
EW[GL*n^p*FromDigits[{1}, base^2]] //. h[i_]^p_.*EW[l_] => EW[h[i]^p]
```

$$24 EW[1\ 827\ 364\ 554\ 637\ 281\ GL\ n^8]$$

```
diag = ds[[1]]
```

```
Diag[ar[5, 1], ar[6, 4], ar[7, 3], ar[8, 2]]
```

```
List@@Expand[(Times @@ diag) ]
```

```
{ar[5, 1], ar[6, 4], ar[7, 3], ar[8, 2]}
```

```

diags = Take[ds, All];
mat = {};
EWRules = {};
Do[
  Print[{i, diags[[i]], MaxMemoryUsed[], TimeUsed[]}];
  vect = U[4, diags[[i]] /. EWRules;
  Print["Length[vect] is ", Length[vect]];
  EWS = Union[Cases[vect, _EW, Infinity]];
  If[EWRules === {}, l = 0, l = Length[EWRules[[1]]]];
  Print["l is ", l];
  If[EWRules === {},
    EWRules = Dispatch[Thread[
      EWS → Table[v[[j+1]], {j, Length[EWS]}]
    ]],
    EWRules = Dispatch[Join[EWRules[[1]], Thread[
      EWS → Table[v[[j+1]], {j, Length[EWS]}]
    ]]]];
  l = Length[EWRules[[1]]];
  Print["l is ", l];
  AppendTo[mat,
    Replace[#, c_. * v[[j_]] ⇒ ({i, j} → c)] & /@ (List @@ vect /. EWRules)
  ],
  {i, Length[diags]}
];
mat = SparseArray[Flatten[mat], {Length[diags], l}];
Print["Computing Rank..."];
MatrixRank[mat]
NullSpace[Transpose[mat]]

{1, Diag[ar[5, 1], ar[6, 4], ar[7, 3], ar[8, 2]], 257 125 336, 80.2718}
Loading 51647382 GL information ...
Loading 51647382 SO information ...
Length[vect] is 229 557
l is 0
l is 229 557
{2, Diag[ar[3, 2], ar[6, 1], ar[7, 5], ar[8, 4]], 294 047 032, 114.073}
Loading 32617584 GL information ...
Loading 32617584 SO information ...
Length[vect] is 249 467
l is 229 557
l is 252 841
{3, Diag[ar[4, 2], ar[6, 1], ar[7, 5], ar[8, 3]], 365 934 688, 156.805}
Loading 42617583 GL information ...
Loading 42617583 SO information ...

```



```
Length[vect] is 250877
l is 252841
l is 252919
{4, Diag[ar[4, 7], ar[5, 2], ar[6, 1], ar[8, 3]], 425230248, 202.814}
Loading 47526183 GL information ...
Loading 47526183 SO information ...
Length[vect] is 245242
l is 252919
l is 267067
{5, Diag[ar[5, 2], ar[6, 1], ar[7, 4], ar[8, 3]], 469799232, 250.532}
Loading 52617483 GL information ...
Loading 52617483 SO information ...
Length[vect] is 237763
l is 267067
l is 267067
{6, Diag[ar[4, 3], ar[6, 1], ar[7, 5], ar[8, 2]], 513212736, 291.973}
Loading 43617582 GL information ...
Loading 43617582 SO information ...
Length[vect] is 252400
l is 267067
l is 267067
{7, Diag[ar[4, 7], ar[5, 3], ar[6, 1], ar[8, 2]], 552227568, 344.779}
Loading 47536182 GL information ...
Loading 47536182 SO information ...
Length[vect] is 245037
l is 267067
l is 267213
{8, Diag[ar[5, 3], ar[6, 1], ar[7, 4], ar[8, 2]], 595344776, 389.751}
Loading 53617482 GL information ...
Loading 53617482 SO information ...
Length[vect] is 237136
l is 267213
l is 267213
{9, Diag[ar[4, 5], ar[6, 1], ar[7, 3], ar[8, 2]], 633108480, 439.16}
Loading 45617382 GL information ...
```

```
Loading 45617382 SO information ...
Length[vect] is 238483
1 is 267213
1 is 270739
{10, Diag[ar[5, 4], ar[6, 1], ar[7, 3], ar[8, 2]], 672257968, 489.72}
Loading 54617382 GL information ...
Loading 54617382 SO information ...
Length[vect] is 238084
1 is 270739
1 is 270739
{11, Diag[ar[1, 7], ar[4, 2], ar[6, 3], ar[8, 5]], 712938176, 535.005}
Loading 17426385 GL information ...
Loading 17426385 SO information ...
Length[vect] is 253200
1 is 270739
1 is 277143
{12, Diag[ar[1, 7], ar[3, 6], ar[4, 8], ar[5, 2]], 754587024, 589.919}
Loading 17364852 GL information ...
Loading 17364852 SO information ...
Length[vect] is 195183
1 is 277143
1 is 277751
{13, Diag[ar[1, 7], ar[3, 6], ar[5, 2], ar[8, 4]], 783685600, 630.475}
Loading 17365284 GL information ...
Loading 17365284 SO information ...
Length[vect] is 236820
1 is 277751
1 is 278368
{14, Diag[ar[1, 7], ar[5, 2], ar[6, 3], ar[8, 4]], 827803424, 676.772}
Loading 17526384 GL information ...
Loading 17526384 SO information ...
Length[vect] is 247191
1 is 278368
1 is 278368
{15, Diag[ar[1, 7], ar[3, 8], ar[5, 2], ar[6, 4]], 871263912, 728.616}
```

```
Loading 17385264 GL information ...
Loading 17385264 SO information ...
Length[vect] is 236543
1 is 278368
1 is 278368
{16, Diag[ar[1, 7], ar[5, 2], ar[6, 4], ar[8, 3]], 909232056, 778.647}
Loading 17526483 GL information ...
Loading 17526483 SO information ...
Length[vect] is 246703
1 is 278368
1 is 278368
{17, Diag[ar[1, 7], ar[2, 6], ar[5, 3], ar[8, 4]], 948350968, 821.977}
Loading 17265384 GL information ...
Loading 17265384 SO information ...
Length[vect] is 235605
1 is 278368
1 is 278368
{18, Diag[ar[1, 7], ar[4, 3], ar[6, 2], ar[8, 5]], 988259192, 869.73}
Loading 17436285 GL information ...
Loading 17436285 SO information ...
Length[vect] is 253516
1 is 278368
1 is 278368
{19, Diag[ar[1, 7], ar[3, 5], ar[4, 8], ar[6, 2]], 1028977704, 917.703}
Loading 17354862 GL information ...
Loading 17354862 SO information ...
Length[vect] is 198342
1 is 278368
1 is 278584
{20, Diag[ar[1, 7], ar[3, 5], ar[6, 2], ar[8, 4]], 1056408696, 957.458}
Loading 17356284 GL information ...
Loading 17356284 SO information ...
Length[vect] is 237917
1 is 278584
1 is 278984
```

```
{21, Diag[ar[1, 7], ar[4, 8], ar[5, 3], ar[6, 2]], 1099 026 032, 1003.2}
Loading 17485362 GL information ...
Loading 17485362 SO information ...
Length[vect] is 235 634
1 is 278 984
1 is 278 984
{22, Diag[ar[1, 7], ar[5, 3], ar[6, 2], ar[8, 4]], 1139 189 872, 1047.37}
Loading 17536284 GL information ...
Loading 17536284 SO information ...
Length[vect] is 247 139
1 is 278 984
1 is 278 984
{23, Diag[ar[1, 7], ar[3, 8], ar[4, 5], ar[6, 2]], 1179 997 424, 1093.9}
Loading 17384562 GL information ...
Loading 17384562 SO information ...
Length[vect] is 196 623
1 is 278 984
1 is 278 984
{24, Diag[ar[1, 7], ar[3, 8], ar[5, 4], ar[6, 2]], 1205 197 888, 1133.16}
Loading 17385462 GL information ...
Loading 17385462 SO information ...
Length[vect] is 236 206
1 is 278 984
1 is 278 984
{25, Diag[ar[1, 7], ar[4, 5], ar[6, 2], ar[8, 3]], 1248 165 560, 1182.02}
Loading 17456283 GL information ...
Loading 17456283 SO information ...
Length[vect] is 238 495
1 is 278 984
1 is 278 984
{26, Diag[ar[1, 7], ar[5, 4], ar[6, 2], ar[8, 3]], 1288 878 088, 1227.12}
Loading 17546283 GL information ...
Loading 17546283 SO information ...
Length[vect] is 247 198
1 is 278 984
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l is 278 984
{27, Diag[ar[1, 7], ar[2, 8], ar[5, 3], ar[6, 4]], 1329 913 288, 1268.46}
Loading 17285364 GL information ...
Loading 17285364 SO information ...
Length[vect] is 221 660
l is 278 984
l is 278 984
{28, Diag[ar[1, 7], ar[2, 8], ar[5, 4], ar[6, 3]], 1361 131 576, 1302.66}
Loading 17285463 GL information ...
Loading 17285463 SO information ...
Length[vect] is 221 825
l is 278 984
l is 278 984
{29, Diag[ar[1, 7], ar[3, 5], ar[6, 4], ar[8, 2]], 1395 566 912, 1337.33}
Loading 17356482 GL information ...
Loading 17356482 SO information ...
Length[vect] is 234 355
l is 278 984
l is 279 024
{30, Diag[ar[1, 7], ar[4, 6], ar[5, 3], ar[8, 2]], 1435 156 288, 1385.42}
Loading 17465382 GL information ...
Loading 17465382 SO information ...
Length[vect] is 226 580
l is 279 024
l is 279 024
{31, Diag[ar[1, 7], ar[5, 3], ar[6, 4], ar[8, 2]], 1470 751 344, 1420.65}
Loading 17536482 GL information ...
Loading 17536482 SO information ...
Length[vect] is 243 402
l is 279 024
l is 279 024
{32, Diag[ar[1, 7], ar[5, 4], ar[6, 3], ar[8, 2]], 1512 358 696, 1463.02}
Loading 17546382 GL information ...
Loading 17546382 SO information ...
Length[vect] is 244 712

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l is 279 024
l is 279 026
{33, Diag[ar[3, 2], ar[4, 8], ar[6, 5], ar[7, 1]], 1552643432, 1506.09}
Loading 32486571 GL information ...
Loading 32486571 SO information ...
Length[vect] is 249060
l is 279 026
l is 279 206
{34, Diag[ar[3, 2], ar[6, 5], ar[7, 1], ar[8, 4]], 1592626688, 1553.91}
Loading 32657184 GL information ...
Loading 32657184 SO information ...
Length[vect] is 240048
l is 279 206
l is 279 226
{35, Diag[ar[4, 2], ar[5, 3], ar[6, 8], ar[7, 1]], 1629927496, 1594.5}
Loading 42536871 GL information ...
Loading 42536871 SO information ...
Length[vect] is 243371
l is 279 226
l is 279 226
{36, Diag[ar[4, 2], ar[5, 3], ar[7, 1], ar[8, 6]], 1671619496, 1644.29}
Loading 42537186 GL information ...
Loading 42537186 SO information ...
Length[vect] is 237015
l is 279 226
l is 279 226
{37, Diag[ar[4, 2], ar[5, 8], ar[6, 3], ar[7, 1]], 1706252536, 1692.67}
Loading 42586371 GL information ...
Loading 42586371 SO information ...
Length[vect] is 245817
l is 279 226
l is 279 226
{38, Diag[ar[4, 2], ar[6, 3], ar[7, 1], ar[8, 5]], 1750974744, 1742.22}
Loading 42637185 GL information ...
Loading 42637185 SO information ...
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Length[vect] is 238428
l is 279226
l is 279226
{39, Diag[ar[2, 5], ar[4, 8], ar[6, 3], ar[7, 1]], 1785548128, 1780.41}
Loading 25486371 GL information ...
Loading 25486371 SO information ...
Length[vect] is 238658
l is 279226
l is 279226
{40, Diag[ar[2, 5], ar[6, 3], ar[7, 1], ar[8, 4]], 1828577776, 1828.31}
Loading 25637184 GL information ...
Loading 25637184 SO information ...
Length[vect] is 246656
l is 279226
l is 279226
{41, Diag[ar[3, 4], ar[5, 2], ar[6, 8], ar[7, 1]], 1868720752, 1878.8}
Loading 34526871 GL information ...
Loading 34526871 SO information ...
Length[vect] is 234552
l is 279226
l is 279226
{42, Diag[ar[3, 4], ar[5, 2], ar[7, 1], ar[8, 6]], 1905208032, 1924.21}
Loading 34527186 GL information ...
Loading 34527186 SO information ...
Length[vect] is 240614
l is 279226
l is 279306
{43, Diag[ar[4, 3], ar[5, 2], ar[6, 8], ar[7, 1]], 1941206472, 1969.4}
Loading 43526871 GL information ...
Loading 43526871 SO information ...
Length[vect] is 244629
l is 279306
l is 279306
{44, Diag[ar[4, 3], ar[5, 2], ar[7, 1], ar[8, 6]], 1984819056, 2020.56}
Loading 43527186 GL information ...
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Loading 43527186 SO information ...
Length[vect] is 248709
1 is 279306
1 is 279306
{45, Diag[ar[3, 6], ar[4, 8], ar[5, 2], ar[7, 1]], 2021468696, 2071.83}
Loading 36485271 GL information ...
Loading 36485271 SO information ...
Length[vect] is 237982
1 is 279306
1 is 279306
{46, Diag[ar[3, 6], ar[5, 2], ar[7, 1], ar[8, 4]], 2065835840, 2116.81}
Loading 36527184 GL information ...
Loading 36527184 SO information ...
Length[vect] is 239561
1 is 279306
1 is 279306
{47, Diag[ar[4, 8], ar[5, 2], ar[6, 3], ar[7, 1]], 2102921536, 2157.2}
Loading 48526371 GL information ...
Loading 48526371 SO information ...
Length[vect] is 247218
1 is 279306
1 is 279306
{48, Diag[ar[5, 2], ar[6, 3], ar[7, 1], ar[8, 4]], 2145816520, 2213.44}
Loading 52637184 GL information ...
Loading 52637184 SO information ...
Length[vect] is 230089
1 is 279306
1 is 279306
{49, Diag[ar[3, 8], ar[4, 6], ar[5, 2], ar[7, 1]], 2183120336, 2257.66}
Loading 38465271 GL information ...
Loading 38465271 SO information ...
Length[vect] is 238123
1 is 279306
1 is 279306
{50, Diag[ar[3, 8], ar[5, 2], ar[6, 4], ar[7, 1]], 2219859712, 2311.31}
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Loading 38526471 GL information ...
Loading 38526471 SO information ...
Length[vect] is 243765
1 is 279306
1 is 279306
{51, Diag[ar[4, 6], ar[5, 2], ar[7, 1], ar[8, 3]], 2259128192, 2352.97}
Loading 46527183 GL information ...
Loading 46527183 SO information ...
Length[vect] is 246446
1 is 279306
1 is 279306
{52, Diag[ar[5, 2], ar[6, 4], ar[7, 1], ar[8, 3]], 2300142984, 2396.06}
Loading 52647183 GL information ...
Loading 52647183 SO information ...
Length[vect] is 237134
1 is 279306
1 is 279306
{53, Diag[ar[2, 6], ar[4, 3], ar[5, 8], ar[7, 1]], 2336796104, 2440.9}
Loading 26435871 GL information ...
Loading 26435871 SO information ...
Length[vect] is 238736
1 is 279306
1 is 279306
{54, Diag[ar[2, 6], ar[4, 3], ar[7, 1], ar[8, 5]], 2377759584, 2498.19}
Loading 26437185 GL information ...
Loading 26437185 SO information ...
Length[vect] is 254353
1 is 279306
1 is 279306
{55, Diag[ar[2, 6], ar[3, 5], ar[4, 8], ar[7, 1]], 2418768512, 2544.45}
Loading 26354871 GL information ...
Loading 26354871 SO information ...
Length[vect] is 198864
1 is 279306
1 is 279306
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{56, Diag[ar[2, 6], ar[3, 5], ar[7, 1], ar[8, 4]], 2446143464, 2592.05}
Loading 26357184 GL information ...
Loading 26357184 SO information ...
Length[vect] is 238599
1 is 279306
1 is 279306
{57, Diag[ar[2, 6], ar[4, 8], ar[5, 3], ar[7, 1]], 2488642600, 2635.17}
Loading 26485371 GL information ...
Loading 26485371 SO information ...
Length[vect] is 237273
1 is 279306
1 is 279306
{58, Diag[ar[2, 6], ar[5, 3], ar[7, 1], ar[8, 4]], 2528276336, 2678.82}
Loading 26537184 GL information ...
Loading 26537184 SO information ...
Length[vect] is 248465
1 is 279306
1 is 279306
{59, Diag[ar[2, 6], ar[3, 8], ar[5, 4], ar[7, 1]], 2569588456, 2724.14}
Loading 26385471 GL information ...
Loading 26385471 SO information ...
Length[vect] is 238791
1 is 279306
1 is 279306
{60, Diag[ar[2, 6], ar[4, 5], ar[7, 1], ar[8, 3]], 2608388648, 2767.46}
Loading 26457183 GL information ...
Loading 26457183 SO information ...
Length[vect] is 237451
1 is 279306
1 is 279322
{61, Diag[ar[2, 6], ar[5, 4], ar[7, 1], ar[8, 3]], 2645693616, 2814.98}
Loading 26547183 GL information ...
Loading 26547183 SO information ...
Length[vect] is 247802
1 is 279322
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l is 279 322
{62, Diag[ar[4, 3], ar[5, 8], ar[6, 2], ar[7, 1]], 2 686 606 416, 2860.08}
Loading 43586271 GL information ...
Loading 43586271 SO information ...
Length[vect] is 248 074
l is 279 322
l is 279 322
{63, Diag[ar[4, 3], ar[6, 2], ar[7, 1], ar[8, 5]], 2 727 269 496, 2910.09}
Loading 43627185 GL information ...
Loading 43627185 SO information ...
Length[vect] is 252 195
l is 279 322
l is 279 322
{64, Diag[ar[3, 5], ar[4, 8], ar[6, 2], ar[7, 1]], 2 764 362 176, 2958.53}
Loading 35486271 GL information ...
Loading 35486271 SO information ...
Length[vect] is 238 083
l is 279 322
l is 279 322
{65, Diag[ar[3, 5], ar[6, 2], ar[7, 1], ar[8, 4]], 2 806 699 680, 3004.51}
Loading 35627184 GL information ...
Loading 35627184 SO information ...
Length[vect] is 248 137
l is 279 322
l is 279 322
{66, Diag[ar[4, 8], ar[5, 3], ar[6, 2], ar[7, 1]], 2 846 876 192, 3053.91}
Loading 48536271 GL information ...
Loading 48536271 SO information ...
Length[vect] is 247 693
l is 279 322
l is 279 322
{67, Diag[ar[5, 3], ar[6, 2], ar[7, 1], ar[8, 4]], 2 887 461 248, 3100.89}
Loading 53627184 GL information ...
Loading 53627184 SO information ...
Length[vect] is 238 112

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l is 279 322
l is 279 322
{68, Diag[ar[3, 8], ar[4, 5], ar[6, 2], ar[7, 1]], 2924547592, 3146.45}
Loading 38456271 GL information ...
Loading 38456271 SO information ...
Length[vect] is 237736
l is 279 322
l is 279 322
{69, Diag[ar[3, 8], ar[5, 4], ar[6, 2], ar[7, 1]], 2963870872, 3191.78}
Loading 38546271 GL information ...
Loading 38546271 SO information ...
Length[vect] is 248156
l is 279 322
l is 279 322
{70, Diag[ar[4, 5], ar[6, 2], ar[7, 1], ar[8, 3]], 3004379008, 3239.99}
Loading 45627183 GL information ...
Loading 45627183 SO information ...
Length[vect] is 236866
l is 279 322
l is 279 322
{71, Diag[ar[5, 4], ar[6, 2], ar[7, 1], ar[8, 3]], 3041613936, 3286.08}
Loading 54627183 GL information ...
Loading 54627183 SO information ...
Length[vect] is 237907
l is 279 322
l is 279 322
{72, Diag[ar[2, 8], ar[3, 5], ar[6, 4], ar[7, 1]], 3079741192, 3332.17}
Loading 28356471 GL information ...
Loading 28356471 SO information ...
Length[vect] is 226562
l is 279 322
l is 279 322
{73, Diag[ar[2, 8], ar[4, 6], ar[5, 3], ar[7, 1]], 3113860896, 3368.67}
Loading 28465371 GL information ...
Loading 28465371 SO information ...
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Length[vect] is 234342
l is 279322
l is 279322
{74, Diag[ar[2, 8], ar[5, 3], ar[6, 4], ar[7, 1]], 3152641240, 3410.28}
Loading 28536471 GL information ...
Loading 28536471 SO information ...
Length[vect] is 243301
l is 279322
l is 279322
{75, Diag[ar[2, 8], ar[3, 6], ar[4, 5], ar[7, 1]], 3193038384, 3453.8}
Loading 28364571 GL information ...
Loading 28364571 SO information ...
Length[vect] is 195020
l is 279322
l is 279322
{76, Diag[ar[2, 8], ar[3, 6], ar[5, 4], ar[7, 1]], 3218598056, 3501.46}
Loading 28365471 GL information ...
Loading 28365471 SO information ...
Length[vect] is 234633
l is 279322
l is 279322
{77, Diag[ar[2, 8], ar[4, 5], ar[6, 3], ar[7, 1]], 3260216576, 3537.68}
Loading 28456371 GL information ...
Loading 28456371 SO information ...
Length[vect] is 234356
l is 279322
l is 279322
{78, Diag[ar[2, 8], ar[5, 4], ar[6, 3], ar[7, 1]], 3299569528, 3574.37}
Loading 28546371 GL information ...
Loading 28546371 SO information ...
Length[vect] is 244698
l is 279322
l is 279322
{79, Diag[ar[3, 5], ar[6, 4], ar[7, 1], ar[8, 2]], 3339598760, 3617.53}
Loading 35647182 GL information ...
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Loading 35647182 SO information ...
Length[vect] is 244578
l is 279322
l is 279322
{80, Diag[ar[4, 6], ar[5, 3], ar[7, 1], ar[8, 2]], 3380052984, 3660.83}
Loading 46537182 GL information ...
Loading 46537182 SO information ...
Length[vect] is 244578
l is 279322
l is 279322
{81, Diag[ar[5, 3], ar[6, 4], ar[7, 1], ar[8, 2]], 3419624032, 3704.28}
Loading 53647182 GL information ...
Loading 53647182 SO information ...
Length[vect] is 224402
l is 279322
l is 279322
{82, Diag[ar[3, 6], ar[4, 5], ar[7, 1], ar[8, 2]], 3454475984, 3740.7}
Loading 36457182 GL information ...
Loading 36457182 SO information ...
Length[vect] is 224061
l is 279322
l is 279322
{83, Diag[ar[3, 6], ar[5, 4], ar[7, 1], ar[8, 2]], 3488182160, 3776.}
Loading 36547182 GL information ...
Loading 36547182 SO information ...
Length[vect] is 232084
l is 279322
l is 279322
{84, Diag[ar[4, 5], ar[6, 3], ar[7, 1], ar[8, 2]], 3525704448, 3814.07}
Loading 45637182 GL information ...
Loading 45637182 SO information ...
Length[vect] is 232998
l is 279322
l is 279322
{85, Diag[ar[5, 4], ar[6, 3], ar[7, 1], ar[8, 2]], 3564005728, 3852.13}
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Loading 54637182 GL information ...
Loading 54637182 SO information ...
Length[vect] is 233353
1 is 279322
1 is 279322
{86, Diag[ar[1, 8], ar[5, 2], ar[6, 4], ar[7, 3]], 3601588232, 3889.06}
Loading 18526473 GL information ...
Loading 18526473 SO information ...
Length[vect] is 236804
1 is 279322
1 is 279322
{87, Diag[ar[1, 8], ar[2, 6], ar[4, 7], ar[5, 3]], 3641815816, 3933.65}
Loading 18264753 GL information ...
Loading 18264753 SO information ...
Length[vect] is 194558
1 is 279322
1 is 279322
{88, Diag[ar[1, 8], ar[2, 6], ar[5, 3], ar[7, 4]], 3668414920, 3981.73}
Loading 18265374 GL information ...
Loading 18265374 SO information ...
Length[vect] is 235639
1 is 279322
1 is 279322
{89, Diag[ar[1, 8], ar[4, 3], ar[5, 7], ar[6, 2]], 3711770200, 4024.33}
Loading 18435762 GL information ...
Loading 18435762 SO information ...
Length[vect] is 233171
1 is 279322
1 is 279322
{90, Diag[ar[1, 8], ar[4, 3], ar[6, 2], ar[7, 5]], 3749673600, 4075.57}
Loading 18436275 GL information ...
Loading 18436275 SO information ...
Length[vect] is 239387
1 is 279322
1 is 279322
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{91, Diag[ar[1, 8], ar[3, 5], ar[4, 7], ar[6, 2]], 3785836864, 4128.21}

Loading 18354762 GL information ...

Loading 18354762 SO information ...

Length[vect] is 197351

l is 279322

l is 279322

{92, Diag[ar[1, 8], ar[3, 5], ar[6, 2], ar[7, 4]], 3816156952, 4162.43}

Loading 18356274 GL information ...

Loading 18356274 SO information ...

Length[vect] is 237838

l is 279322

l is 279322

{93, Diag[ar[1, 8], ar[4, 7], ar[5, 3], ar[6, 2]], 3859251800, 4201.35}

Loading 18475362 GL information ...

Loading 18475362 SO information ...

Length[vect] is 234642

l is 279322

l is 279322

{94, Diag[ar[1, 8], ar[5, 3], ar[6, 2], ar[7, 4]], 3898481832, 4244.29}

Loading 18536274 GL information ...

Loading 18536274 SO information ...

Length[vect] is 235197

l is 279322

l is 279322

{95, Diag[ar[1, 8], ar[3, 7], ar[4, 5], ar[6, 2]], 3935172896, 4288.38}

Loading 18374562 GL information ...

Loading 18374562 SO information ...

Length[vect] is 194957

l is 279322

l is 279322

{96, Diag[ar[1, 8], ar[3, 7], ar[5, 4], ar[6, 2]], 3960796736, 4319.4}

Loading 18375462 GL information ...

Loading 18375462 SO information ...

Length[vect] is 233039

l is 279322


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l is 279 322
{97, Diag[ar[1, 8], ar[4, 5], ar[6, 2], ar[7, 3]], 4 002 536 808, 4358.66}
Loading 18456273 GL information ...
Loading 18456273 SO information ...
Length[vect] is 222 703
l is 279 322
l is 279 322
{98, Diag[ar[1, 8], ar[5, 4], ar[6, 2], ar[7, 3]], 4 037 424 016, 4393.8}
Loading 18546273 GL information ...
Loading 18546273 SO information ...
Length[vect] is 231 804
l is 279 322
l is 279 322
{99, Diag[ar[1, 8], ar[2, 7], ar[3, 5], ar[6, 4]], 4 075 128 792, 4431.41}
Loading 18273564 GL information ...
Loading 18273564 SO information ...
Length[vect] is 190 283
l is 279 322
l is 279 322
{100, Diag[ar[1, 8], ar[2, 7], ar[4, 6], ar[5, 3]], 4 101 050 144, 4464.85}
Loading 18274653 GL information ...
Loading 18274653 SO information ...
Length[vect] is 190 283
l is 279 322
l is 279 322
{101, Diag[ar[1, 8], ar[2, 7], ar[5, 3], ar[6, 4]], 4 129 780 320, 4498.43}
Loading 18275364 GL information ...
Loading 18275364 SO information ...
Length[vect] is 221 326
l is 279 322
l is 279 322
{102, Diag[ar[1, 8], ar[2, 7], ar[3, 6], ar[4, 5]], 4 170 304 160, 4531.82}
Loading 18273645 GL information ...
Loading 18273645 SO information ...
Length[vect] is 91 205
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l is 279 322
l is 279 322
{103, Diag[ar[1, 8], ar[2, 7], ar[3, 6], ar[5, 4]], 4 170 304 160, 4547.47}
Loading 18273654 GL information ...
Loading 18273654 SO information ...
Length[vect] is 182 416
l is 279 322
l is 279 322
{104, Diag[ar[1, 8], ar[2, 7], ar[4, 5], ar[6, 3]], 4 202 709 584, 4576.18}
Loading 18274563 GL information ...
Loading 18274563 SO information ...
Length[vect] is 186 578
l is 279 322
l is 279 322
{105, Diag[ar[1, 8], ar[2, 7], ar[5, 4], ar[6, 3]], 4 238 407 968, 4605.28}
Loading 18275463 GL information ...
Loading 18275463 SO information ...
Length[vect] is 221 541
l is 279 322
l is 279 322
{106, Diag[ar[1, 8], ar[3, 5], ar[6, 4], ar[7, 2]], 4 280 172 344, 4638.28}
Loading 18356472 GL information ...
Loading 18356472 SO information ...
Length[vect] is 234 743
l is 279 322
l is 279 322
{107, Diag[ar[1, 8], ar[4, 6], ar[5, 3], ar[7, 2]], 4 321 853 496, 4673.66}
Loading 18465372 GL information ...
Loading 18465372 SO information ...
Length[vect] is 234 743
l is 279 322
l is 279 322
{108, Diag[ar[1, 8], ar[5, 3], ar[6, 4], ar[7, 2]], 4 360 119 552, 4709.51}
Loading 18536472 GL information ...
Loading 18536472 SO information ...
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Length[vect] is 231935
1 is 279322
1 is 279322
{109, Diag[ar[1, 8], ar[3, 6], ar[4, 5], ar[7, 2]], 4395838496, 4746.72}
Loading 18364572 GL information ...
Loading 18364572 SO information ...
Length[vect] is 187134
1 is 279322
1 is 279322
{110, Diag[ar[1, 8], ar[3, 6], ar[5, 4], ar[7, 2]], 4419793336, 4776.88}
Loading 18365472 GL information ...
Loading 18365472 SO information ...
Length[vect] is 222665
1 is 279322
1 is 279322
{111, Diag[ar[1, 8], ar[4, 5], ar[6, 3], ar[7, 2]], 4459055192, 4811.45}
Loading 18456372 GL information ...
Loading 18456372 SO information ...
Length[vect] is 223944
1 is 279322
1 is 279322
{112, Diag[ar[1, 8], ar[5, 4], ar[6, 3], ar[7, 2]], 4497034776, 4846.35}
Loading 18546372 GL information ...
Loading 18546372 SO information ...
Length[vect] is 233224
1 is 279322
1 is 279322
{113, Diag[ar[5, 2], ar[6, 4], ar[7, 3], ar[8, 1]], 4534799112, 4882.59}
Loading 52647381 GL information ...
Loading 52647381 SO information ...
Length[vect] is 238204
1 is 279322
1 is 279322
{114, Diag[ar[2, 6], ar[4, 7], ar[5, 3], ar[8, 1]], 4576338968, 4925.89}
Loading 26475381 GL information ...

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Loading 26475381 SO information ...
Length[vect] is 238 229
1 is 279 322
1 is 279 322
{115, Diag[ar[2, 6], ar[5, 3], ar[7, 4], ar[8, 1]], 4 616 630 496, 4984.51}
Loading 26537481 GL information ...
Loading 26537481 SO information ...
Length[vect] is 248 365
1 is 279 322
1 is 279 322
{116, Diag[ar[4, 3], ar[5, 7], ar[6, 2], ar[8, 1]], 4 657 644 568, 5027.05}
Loading 43576281 GL information ...
Loading 43576281 SO information ...
Length[vect] is 246 083
1 is 279 322
1 is 279 322
{117, Diag[ar[4, 3], ar[6, 2], ar[7, 5], ar[8, 1]], 4 695 889 224, 5089.59}
Loading 43627581 GL information ...
Loading 43627581 SO information ...
Length[vect] is 245 693
1 is 279 322
1 is 279 322
{118, Diag[ar[3, 5], ar[4, 7], ar[6, 2], ar[8, 1]], 4 730 640 336, 5132.93}
Loading 35476281 GL information ...
Loading 35476281 SO information ...
Length[vect] is 238 578
1 is 279 322
1 is 279 322
{119, Diag[ar[3, 5], ar[6, 2], ar[7, 4], ar[8, 1]], 4 776 012 240, 5178.79}
Loading 35627481 GL information ...
Loading 35627481 SO information ...
Length[vect] is 248 121
1 is 279 322
1 is 279 322
{120, Diag[ar[4, 7], ar[5, 3], ar[6, 2], ar[8, 1]], 4 816 418 008, 5221.68}
```

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Loading 47536281 GL information ...
Loading 47536281 SO information ...
Length[vect] is 249316
1 is 279322
1 is 279322
{121, Diag[ar[5, 3], ar[6, 2], ar[7, 4], ar[8, 1]], 4857030664, 5269.69}
Loading 53627481 GL information ...
Loading 53627481 SO information ...
Length[vect] is 238063
1 is 279322
1 is 279322
{122, Diag[ar[3, 7], ar[4, 5], ar[6, 2], ar[8, 1]], 4893982936, 5316.3}
Loading 37456281 GL information ...
Loading 37456281 SO information ...
Length[vect] is 235094
1 is 279322
1 is 279322
{123, Diag[ar[3, 7], ar[5, 4], ar[6, 2], ar[8, 1]], 4931109128, 5358.81}
Loading 37546281 GL information ...
Loading 37546281 SO information ...
Length[vect] is 246708
1 is 279322
1 is 279322
{124, Diag[ar[4, 5], ar[6, 2], ar[7, 3], ar[8, 1]], 4971256872, 5399.2}
Loading 45627381 GL information ...
Loading 45627381 SO information ...
Length[vect] is 233066
1 is 279322
1 is 279322
{125, Diag[ar[5, 4], ar[6, 2], ar[7, 3], ar[8, 1]], 5007296856, 5439.06}
Loading 54627381 GL information ...
Loading 54627381 SO information ...
Length[vect] is 233290
1 is 279322
1 is 279322
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{126, Diag[ar[2, 7], ar[3, 5], ar[6, 4], ar[8, 1]], 5 044 197 080, 5477.96}

Loading 27356481 GL information ...

Loading 27356481 SO information ...

Length[vect] is 234 791

1 is 279 322

1 is 279 322

{127, Diag[ar[2, 7], ar[4, 6], ar[5, 3], ar[8, 1]], 5 083 816 072, 5516.59}

Loading 27465381 GL information ...

Loading 27465381 SO information ...

Length[vect] is 234 791

1 is 279 322

1 is 279 322

{128, Diag[ar[2, 7], ar[5, 3], ar[6, 4], ar[8, 1]], 5 121 470 000, 5555.52}

Loading 27536481 GL information ...

Loading 27536481 SO information ...

Length[vect] is 232 813

1 is 279 322

1 is 279 322

{129, Diag[ar[2, 7], ar[3, 6], ar[4, 5], ar[8, 1]], 5 157 265 224, 5595.47}

Loading 27364581 GL information ...

Loading 27364581 SO information ...

Length[vect] is 187 225

1 is 279 322

1 is 279 322

{130, Diag[ar[2, 7], ar[3, 6], ar[5, 4], ar[8, 1]], 5 181 473 504, 5627.33}

Loading 27365481 GL information ...

Loading 27365481 SO information ...

Length[vect] is 224 123

1 is 279 322

1 is 279 322

{131, Diag[ar[2, 7], ar[4, 5], ar[6, 3], ar[8, 1]], 5 221 353 136, 5663.31}

Loading 27456381 GL information ...

Loading 27456381 SO information ...

Length[vect] is 224 185

1 is 279 322

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l is 279 322
{132, Diag[ar[2, 7], ar[5, 4], ar[6, 3], ar[8, 1]], 5 258 989 784, 5699.91}
Loading 27546381 GL information ...
Loading 27546381 SO information ...
Length[vect] is 234 432
l is 279 322
l is 279 322
{133, Diag[ar[3, 5], ar[6, 4], ar[7, 2], ar[8, 1]], 5 296 859 648, 5738.71}
Loading 35647281 GL information ...
Loading 35647281 SO information ...
Length[vect] is 246 591
l is 279 322
l is 279 322
{134, Diag[ar[4, 6], ar[5, 3], ar[7, 2], ar[8, 1]], 5 340 050 664, 5782.38}
Loading 46537281 GL information ...
Loading 46537281 SO information ...
Length[vect] is 246 591
l is 279 322
l is 279 322
{135, Diag[ar[5, 3], ar[6, 4], ar[7, 2], ar[8, 1]], 5 380 537 072, 5826.51}
Loading 53647281 GL information ...
Loading 53647281 SO information ...
Length[vect] is 233 217
l is 279 322
l is 279 322
{136, Diag[ar[3, 6], ar[4, 5], ar[7, 2], ar[8, 1]], 5 415 668 656, 5864.12}
Loading 36457281 GL information ...
Loading 36457281 SO information ...
Length[vect] is 224 129
l is 279 322
l is 279 322
{137, Diag[ar[3, 6], ar[5, 4], ar[7, 2], ar[8, 1]], 5 450 940 640, 5899.89}
Loading 36547281 GL information ...
Loading 36547281 SO information ...
Length[vect] is 234 461

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l is 279 322
l is 279 322
{138, Diag[ar[4, 5], ar[6, 3], ar[7, 2], ar[8, 1]], 5 488 321 168, 5939.08}
Loading 45637281 GL information ...
Loading 45637281 SO information ...
Length[vect] is 233 330
l is 279 322
l is 279 322
{139, Diag[ar[5, 4], ar[6, 3], ar[7, 2], ar[8, 1]], 5 526 353 632, 5975.86}
Loading 54637281 GL information ...
Loading 54637281 SO information ...
Length[vect] is 221 530
l is 279 322
l is 279 322
{140, Diag[ar[1, 2], ar[3, 4], ar[5, 6], ar[7, 8]], 5 562 803 408, 6013.2}
Loading 12345678 GL information ...
Loading 12345678 SO information ...
Length[vect] is 95 791
l is 279 322
l is 279 322
{141, Diag[ar[1, 2], ar[3, 8], ar[5, 4], ar[7, 6]], 5 562 803 408, 6056.57}
Loading 12385476 GL information ...
Loading 12385476 SO information ...
Length[vect] is 216 450
l is 279 322
l is 279 322
{142, Diag[ar[2, 1], ar[3, 7], ar[6, 4], ar[8, 5]], 5 606 022 880, 6121.01}
Loading 21376485 GL information ...
Loading 21376485 SO information ...
Length[vect] is 252 900
l is 279 322
l is 279 322
{143, Diag[ar[1, 3], ar[2, 6], ar[7, 5], ar[8, 4]], 5 657 059 344, 6192.38}
Loading 13267584 GL information ...
Loading 13267584 SO information ...
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Length[vect] is 236161
l is 279322
l is 279322
{144, Diag[ar[3, 1], ar[5, 2], ar[6, 4], ar[8, 7]], 5697574648, 6268.42}
Loading 31526487 GL information ...
Loading 31526487 SO information ...
Length[vect] is 241570
l is 279322
l is 279422
{145, Diag[ar[1, 4], ar[3, 2], ar[7, 5], ar[8, 6]], 5733954864, 6340.94}
Loading 14327586 GL information ...
Loading 14327586 SO information ...
Length[vect] is 237732
l is 279422
l is 279422
{146, Diag[ar[1, 4], ar[6, 5], ar[7, 3], ar[8, 2]], 5770599776, 6409.36}
Loading 14657382 GL information ...
Loading 14657382 SO information ...
Length[vect] is 247986
l is 279422
l is 279422
{147, Diag[ar[2, 8], ar[4, 1], ar[5, 3], ar[7, 6]], 5816169168, 6486.83}
Loading 28415376 GL information ...
Loading 28415376 SO information ...
Length[vect] is 252933
l is 279422
l is 279422
{148, Diag[ar[1, 5], ar[2, 7], ar[6, 3], ar[8, 4]], 5857687936, 6559.66}
Loading 15276384 GL information ...
Loading 15276384 SO information ...
Length[vect] is 233862
l is 279422
l is 279422
{149, Diag[ar[2, 6], ar[5, 1], ar[7, 4], ar[8, 3]], 5894502176, 6631.34}
Loading 26517483 GL information ...
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Loading 26517483 SO information ...
Length[vect] is 247832
1 is 279422
1 is 279422
{150, Diag[ar[1, 6], ar[4, 2], ar[5, 3], ar[8, 7]], 5935417088, 6683.11}
Loading 16425387 GL information ...
Loading 16425387 SO information ...
Length[vect] is 237921
1 is 279422
1 is 279422
{151, Diag[ar[3, 2], ar[6, 1], ar[7, 4], ar[8, 5]], 5970334216, 6721.79}
Loading 32617485 GL information ...
Loading 32617485 SO information ...
Length[vect] is 243787
1 is 279422
1 is 279422
{152, Diag[ar[5, 4], ar[6, 1], ar[7, 3], ar[8, 2]], 6011850168, 6770.8}
Loading 54617382 GL information ...
Loading 54617382 SO information ...
Length[vect] is 238084
1 is 279422
1 is 279422
{153, Diag[ar[1, 7], ar[2, 8], ar[4, 3], ar[6, 5]], 6051106240, 6818.59}
Loading 17284365 GL information ...
Loading 17284365 SO information ...
Length[vect] is 216149
1 is 279422
1 is 279422
{154, Diag[ar[2, 6], ar[5, 3], ar[7, 1], ar[8, 4]], 6083144488, 6855.19}
Loading 26537184 GL information ...
Loading 26537184 SO information ...
Length[vect] is 248465
1 is 279422
1 is 279422
{155, Diag[ar[1, 8], ar[2, 5], ar[6, 4], ar[7, 3]], 6127177728, 6899.49}
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base = 10

10