Σ of type G2

subset H	type of H	single cell	free	orbit basis
		YES	(YES)	(YES)
1	A_1	YES	(YES)	(YES)
2	A_1	YES	(YES)	(YES)
1, 2	G_2	YES	(YES)	(YES)

Σ of type F4

subset H	type of H	single cell	free	orbit basis
		YES	(YES)	(YES)
1	A_1	YES	(YES)	(YES)
2	A_1	YES	(YES)	(YES)
3	A_1	YES	(YES)	(YES)
4	A_1	YES	(YES)	(YES)
1, 2	A_2	YES	(YES)	(YES)
3, 4	A_2	YES	(YES)	(YES)
2, 3	B_2	YES	(YES)	(YES)
1, 2, 3	B_3	no	YES	YES
2, 3, 4	C_3	no	no	(YES)
1, 2, 3, 4	F_4	YES	(YES)	(YES)
1, 3	$A_1 \times A_1$	no	YES	YES
1, 4	$A_1 \times A_1$	no	YES	YES
2, 4	$A_1 \times A_1$	no	YES	YES
1, 2, 4	$A_1 \times A_2$	no	YES	YES
1, 3, 4	$A_1 \times A_2$	no	YES	YES

Σ of type E6

subset H	type of H	single cell	free	orbit basis
		YES	(YES)	(YES)
1	A_1	YES	(YES)	(YES)
2	A_1	YES	(YES)	(YES)
3	A_1	YES	(YES)	(YES)
4	A_1	YES	(YES)	(YES)
5	A_1	YES	(YES)	(YES)
6	A_1	YES	(YES)	(YES)
1, 3	A_2	YES	(YES)	(YES)
2, 4	A_2	YES	(YES)	(YES)
3, 4	A_2	YES	(YES)	(YES)
4, 5	A_2	YES	(YES)	(YES)
5, 6	A_2	YES	(YES)	(YES)
1, 3, 4	A_3	YES	(YES)	(YES)
2, 3, 4	A_3	YES	(YES)	(YES)
2, 4, 5	A_3	YES	(YES)	(YES)
3, 4, 5	A_3	YES	(YES)	(YES)
4, 5, 6	A_3	YES	(YES)	(YES)
1, 2, 3, 4	A_4	YES	(YES)	(YES)
1, 3, 4, 5	A_4	YES	(YES)	(YES)
2, 4, 5, 6	A_4	YES	(YES)	(YES)
3, 4, 5, 6	A_4	YES	(YES)	(YES)
1, 3, 4, 5, 6	A_5	no	YES	YES
2, 3, 4, 5	D_4	no	no	(no)
1, 2, 3, 4, 5	D_5	no	no	(no)
2, 3, 4, 5, 6	D_5	no	no	(no)
1, 2, 3, 4, 5, 6	E_6	YES	(YES)	(YES)
1, 2	$A_1 \times A_1$	no	YES	no
1, 4	$A_1 \times A_1$	no	YES	no
1, 5	$A_1 \times A_1$	no	YES	no
1, 6	$A_1 \times A_1$	no	YES	no
2, 3	$A_1 \times A_1$	no	YES	no
2, 5	$A_1 \times A_1$	no	YES	no
2, 6	$A_1 \times A_1$	no	YES	no
3, 5	$A_1 \times A_1$	no	YES	no
3, 6	$A_1 \times A_1$	no	YES	no
4, 6	$A_1 \times A_1$	no	YES	no
1, 2, 3	$A_1 \times A_2$	no	YES	no
1, 2, 4	$A_1 \times A_2$	no	YES	no
1, 3, 5	$A_1 \times A_2$	no	YES	no
1, 3, 6	$A_1 \times A_2$	no	YES	no
1, 4, 5	$A_1 \times A_2$	no	YES	no

$1, 5, 6$	$A_1 \times A_2$	no	YES	no
$2, 4, 6$	$A_1 \times A_2$	no	YES	no
$2, 5, 6$	$A_1 \times A_2$	no	YES	no
$3, 4, 6$	$A_1 \times A_2$	no	YES	no
$3, 5, 6$	$A_1 \times A_2$	no	YES	no
$1, 2, 4, 5$	$A_1 \times A_3$	no	YES	no
$1, 3, 4, 6$	$A_1 \times A_3$	no	YES	no
$1, 4, 5, 6$	$A_1 \times A_3$	no	YES	no
$2, 3, 4, 6$	$A_1 \times A_3$	no	YES	no
$1, 2, 3, 4, 6$	$A_1 \times A_4$	no	YES	no
$1, 2, 4, 5, 6$	$A_1 \times A_4$	no	YES	no
$1, 3, 5, 6$	$A_2 \times A_2$	no	YES	no
$1, 2, 5$	$A_1 \times A_1 \times A_1$	no	YES	no
$1, 2, 6$	$A_1 \times A_1 \times A_1$	no	YES	no
$1, 4, 6$	$A_1 \times A_1 \times A_1$	no	YES	no
$2, 3, 5$	$A_1 \times A_1 \times A_1$	no	YES	no
$2, 3, 6$	$A_1 \times A_1 \times A_1$	no	YES	no
$1, 2, 3, 5$	$A_1 \times A_1 \times A_2$	no	YES	no
$1, 2, 3, 6$	$A_1 \times A_1 \times A_2$	no	YES	no
$1, 2, 4, 6$	$A_1 \times A_1 \times A_2$	no	YES	no
$1, 2, 5, 6$	$A_1 \times A_1 \times A_2$	no	YES	no
$2, 3, 5, 6$	$A_1 \times A_1 \times A_2$	no	YES	no
$1, 2, 3, 5, 6$	$A_1 \times A_2 \times A_2$	no	YES	no

Σ of type **E7**

subset H	type of H	single cell	free	orbit basis
		YES	(YES)	(YES)
1	A_1	YES	(YES)	(YES)
2	A_1	YES	(YES)	(YES)
3	A_1	YES	(YES)	(YES)
4	A_1	YES	(YES)	(YES)
5	A_1	YES	(YES)	(YES)
6	A_1	YES	(YES)	(YES)
7	A_1	YES	(YES)	(YES)
1, 3	A_2	YES	(YES)	(YES)
2, 4	A_2	YES	(YES)	(YES)
3, 4	A_2	YES	(YES)	(YES)
4, 5	A_2	YES	(YES)	(YES)
5, 6	A_2	YES	(YES)	(YES)
6, 7	A_2	YES	(YES)	(YES)
1, 3, 4	A_3	YES	(YES)	(YES)
2, 3, 4	A_3	YES	(YES)	(YES)
2, 4, 5	A_3	YES	(YES)	(YES)
3, 4, 5	A_3	YES	(YES)	(YES)
4, 5, 6	A_3	YES	(YES)	(YES)
5, 6, 7	A_3	YES	(YES)	(YES)
1, 2, 3, 4	A_4	YES	(YES)	(YES)
1, 3, 4, 5	A_4	YES	(YES)	(YES)
2, 4, 5, 6	A_4	YES	(YES)	(YES)
3, 4, 5, 6	A_4	YES	(YES)	(YES)
4, 5, 6, 7	A_4	YES	(YES)	(YES)
1, 3, 4, 5, 6	A_5	no	YES	YES
2, 4, 5, 6, 7	A_5	YES	(YES)	(YES)
3, 4, 5, 6, 7	A_5	no	YES	YES
1, 3, 4, 5, 6, 7	A_6	no	YES	YES
2, 3, 4, 5	D_4	no	no	(no)
1, 2, 3, 4, 5	D_5	no	no	(no)
2, 3, 4, 5, 6	D_5	no	no	(no)
2, 3, 4, 5, 6, 7	D_6	no	no	(no)
1, 2, 3, 4, 5, 6	E_6	YES	(YES)	(YES)
1, 2, 3, 4, 5, 6, 7	E_7	YES	(YES)	(YES)
1, 2	$A_1 \times A_1$	no	YES	no
1, 4	$A_1 \times A_1$	no	YES	no
1, 5	$A_1 \times A_1$	no	YES	no
1, 6	$A_1 \times A_1$	no	YES	no
1, 7	$A_1 \times A_1$	no	YES	no
2, 3	$A_1 \times A_1$	no	YES	no

$2,5$	$A_1 \times A_1$	no	YES	no
$2,6$	$A_1 \times A_1$	no	YES	no
$2,7$	$A_1 \times A_1$	no	YES	no
$3,5$	$A_1 \times A_1$	no	YES	no
$3,6$	$A_1 \times A_1$	no	YES	no
$3,7$	$A_1 \times A_1$	no	YES	no
$4,6$	$A_1 \times A_1$	no	YES	no
$4,7$	$A_1 \times A_1$	no	YES	no
$5,7$	$A_1 \times A_1$	no	YES	no
$1,2,3$	$A_1 \times A_2$	no	YES	no
$1,2,4$	$A_1 \times A_2$	no	YES	no
$1,3,5$	$A_1 \times A_2$	no	YES	no
$1,3,6$	$A_1 \times A_2$	no	YES	no
$1,3,7$	$A_1 \times A_2$	no	YES	no
$1,4,5$	$A_1 \times A_2$	no	YES	no
$1,5,6$	$A_1 \times A_2$	no	YES	no
$1,6,7$	$A_1 \times A_2$	no	YES	no
$2,4,6$	$A_1 \times A_2$	no	YES	no
$2,4,7$	$A_1 \times A_2$	no	YES	no
$2,5,6$	$A_1 \times A_2$	no	YES	no
$2,6,7$	$A_1 \times A_2$	no	YES	no
$3,4,6$	$A_1 \times A_2$	no	YES	no
$3,4,7$	$A_1 \times A_2$	no	YES	no
$3,5,6$	$A_1 \times A_2$	no	YES	no
$3,6,7$	$A_1 \times A_2$	no	YES	no
$4,5,7$	$A_1 \times A_2$	no	YES	no
$4,6,7$	$A_1 \times A_2$	no	YES	no
$1,2,4,5$	$A_1 \times A_3$	no	YES	no
$1,3,4,6$	$A_1 \times A_3$	no	YES	no
$1,3,4,7$	$A_1 \times A_3$	no	YES	no
$1,4,5,6$	$A_1 \times A_3$	no	YES	no
$1,5,6,7$	$A_1 \times A_3$	no	YES	no
$2,3,4,6$	$A_1 \times A_3$	no	YES	no
$2,3,4,7$	$A_1 \times A_3$	no	YES	no
$2,4,5,7$	$A_1 \times A_3$	no	no	(no)
$2,5,6,7$	$A_1 \times A_3$	no	no	(no)
$3,4,5,7$	$A_1 \times A_3$	no	YES	no
$3,5,6,7$	$A_1 \times A_3$	no	YES	no
$1,2,3,4,6$	$A_1 \times A_4$	no	YES	no
$1,2,3,4,7$	$A_1 \times A_4$	no	YES	no
$1,2,4,5,6$	$A_1 \times A_4$	no	YES	no
$1,3,4,5,7$	$A_1 \times A_4$	no	YES	no
$1,4,5,6,7$	$A_1 \times A_4$	no	YES	no
$1,2,4,5,6,7$	$A_1 \times A_5$	no	YES	no
$2,3,4,5,7$	$A_1 \times D_4$	no	no	(no)
$1,2,3,4,5,7$	$A_1 \times D_5$	no	no	(no)

5

$1, 3, 5, 6$	$A_2 \times A_2$	no	YES	no
$1, 3, 6, 7$	$A_2 \times A_2$	no	YES	no
$2, 4, 6, 7$	$A_2 \times A_2$	no	YES	no
$3, 4, 6, 7$	$A_2 \times A_2$	no	YES	no
$1, 3, 4, 6, 7$	$A_2 \times A_3$	no	YES	no
$1, 3, 5, 6, 7$	$A_2 \times A_3$	no	YES	no
$2, 3, 4, 6, 7$	$A_2 \times A_3$	no	YES	no
$1, 2, 3, 4, 6, 7$	$A_2 \times A_4$	no	YES	no
$1, 2, 5$	$A_1 \times A_1 \times A_1$	no	YES	no
$1, 2, 6$	$A_1 \times A_1 \times A_1$	no	YES	no
$1, 2, 7$	$A_1 \times A_1 \times A_1$	no	YES	no
$1, 4, 6$	$A_1 \times A_1 \times A_1$	no	YES	no
$1, 4, 7$	$A_1 \times A_1 \times A_1$	no	YES	no
$1, 5, 7$	$A_1 \times A_1 \times A_1$	no	YES	no
$2, 3, 5$	$A_1 \times A_1 \times A_1$	no	YES	no
$2, 3, 6$	$A_1 \times A_1 \times A_1$	no	YES	no
$2, 3, 7$	$A_1 \times A_1 \times A_1$	no	YES	no
$2, 5, 7$	$A_1 \times A_1 \times A_1$	no	no	(no)
$3, 5, 7$	$A_1 \times A_1 \times A_1$	no	YES	no
$1, 2, 3, 5$	$A_1 \times A_1 \times A_2$	no	YES	no
$1, 2, 3, 6$	$A_1 \times A_1 \times A_2$	no	YES	no
$1, 2, 3, 7$	$A_1 \times A_1 \times A_2$	no	YES	no
$1, 2, 4, 6$	$A_1 \times A_1 \times A_2$	no	YES	no
$1, 2, 4, 7$	$A_1 \times A_1 \times A_2$	no	YES	no
$1, 2, 5, 6$	$A_1 \times A_1 \times A_2$	no	YES	no
$1, 2, 6, 7$	$A_1 \times A_1 \times A_2$	no	YES	no
$1, 3, 5, 7$	$A_1 \times A_1 \times A_2$	no	YES	no
$1, 4, 5, 7$	$A_1 \times A_1 \times A_2$	no	YES	no
$1, 4, 6, 7$	$A_1 \times A_1 \times A_2$	no	YES	no
$2, 3, 5, 6$	$A_1 \times A_1 \times A_2$	no	YES	no
$2, 3, 6, 7$	$A_1 \times A_1 \times A_2$	no	YES	no
$1, 2, 4, 5, 7$	$A_1 \times A_1 \times A_3$	no	no	(no)
$1, 2, 5, 6, 7$	$A_1 \times A_1 \times A_3$	no	no	(no)
$2, 3, 5, 6, 7$	$A_1 \times A_1 \times A_3$	no	no	(no)
$1, 2, 3, 5, 6$	$A_1 \times A_2 \times A_2$	no	YES	no
$1, 2, 3, 6, 7$	$A_1 \times A_2 \times A_2$	no	YES	no
$1, 2, 4, 6, 7$	$A_1 \times A_2 \times A_2$	no	YES	no
$1, 2, 3, 5, 6, 7$	$A_1 \times A_2 \times A_3$	no	no	(no)
$1, 2, 5, 7$	$A_1 \times A_1 \times A_1 \times A_1$	no	no	(no)
$2, 3, 5, 7$	$A_1 \times A_1 \times A_1 \times A_1$	no	no	(no)
$1, 2, 3, 5, 7$	$A_1 \times A_1 \times A_1 \times A_2$	no	no	(no)

Σ of type E8

subset H	type of H	single cell	free	orbit basis
		YES	(YES)	(???)
1	A_1	YES	(YES)	(???)
2	A_1	YES	(YES)	(???)
3	A_1	YES	(YES)	(???)
4	A_1	YES	(YES)	(???)
5	A_1	YES	(YES)	(???)
6	A_1	YES	(YES)	(???)
7	A_1	YES	(YES)	(???)
8	A_1	YES	(YES)	(???)
1, 3	A_2	YES	(YES)	(???)
2, 4	A_2	YES	(YES)	(???)
3, 4	A_2	YES	(YES)	(???)
4, 5	A_2	YES	(YES)	(???)
5, 6	A_2	YES	(YES)	(???)
6, 7	A_2	YES	(YES)	(???)
7, 8	A_2	YES	(YES)	(???)
1, 3, 4	A_3	YES	(YES)	(???)
2, 3, 4	A_3	YES	(YES)	(???)
2, 4, 5	A_3	YES	(YES)	(???)
3, 4, 5	A_3	YES	(YES)	(???)
4, 5, 6	A_3	YES	(YES)	(???)
5, 6, 7	A_3	YES	(YES)	(???)
6, 7, 8	A_3	YES	(YES)	(???)
1, 2, 3, 4	A_4	YES	(YES)	(???)
1, 3, 4, 5	A_4	YES	(YES)	(???)
2, 4, 5, 6	A_4	YES	(YES)	(???)
3, 4, 5, 6	A_4	YES	(YES)	(???)
4, 5, 6, 7	A_4	YES	(YES)	(???)
5, 6, 7, 8	A_4	YES	(YES)	(???)
1, 3, 4, 5, 6	A_5	no	YES	???
2, 4, 5, 6, 7	A_5	no	YES	???
3, 4, 5, 6, 7	A_5	no	YES	???
4, 5, 6, 7, 8	A_5	no	YES	???
1, 3, 4, 5, 6, 7	A_6	no	YES	???
2, 4, 5, 6, 7, 8	A_6	no	YES	???
3, 4, 5, 6, 7, 8	A_6	no	YES	???
1, 3, 4, 5, 6, 7, 8	A_7	no	YES	???
2, 3, 4, 5	D_4	no	no	(???)
1, 2, 3, 4, 5	D_5	no	no	(???)
2, 3, 4, 5, 6	D_5	no	no	(???)
2, 3, 4, 5, 6, 7	D_6	no	no	(???)

$2,3,4,5,6,7,8$	D_7	no	no	(???)
$1,2,3,4,5,6$	E_6	YES	(YES)	(???)
$1,2,3,4,5,6,7$	E_7	no	no	(???)
$1,2,3,4,5,6,7,8$	E_8	YES	(YES)	(???)
$1,2$	$A_1 \times A_1$	no	YES	???
$1,4$	$A_1 \times A_1$	no	YES	???
$1,5$	$A_1 \times A_1$	no	YES	???
$1,6$	$A_1 \times A_1$	no	YES	???
$1,7$	$A_1 \times A_1$	no	YES	???
$1,8$	$A_1 \times A_1$	no	YES	???
$2,3$	$A_1 \times A_1$	no	YES	???
$2,5$	$A_1 \times A_1$	no	YES	???
$2,6$	$A_1 \times A_1$	no	YES	???
$2,7$	$A_1 \times A_1$	no	YES	???
$2,8$	$A_1 \times A_1$	no	YES	???
$3,5$	$A_1 \times A_1$	no	YES	???
$3,6$	$A_1 \times A_1$	no	YES	???
$3,7$	$A_1 \times A_1$	no	YES	???
$3,8$	$A_1 \times A_1$	no	YES	???
$4,6$	$A_1 \times A_1$	no	YES	???
$4,7$	$A_1 \times A_1$	no	YES	???
$4,8$	$A_1 \times A_1$	no	YES	???
$5,7$	$A_1 \times A_1$	no	YES	???
$5,8$	$A_1 \times A_1$	no	YES	???
$6,8$	$A_1 \times A_1$	no	YES	???
$1,2,3$	$A_1 \times A_2$	no	YES	???
$1,2,4$	$A_1 \times A_2$	no	YES	???
$1,3,5$	$A_1 \times A_2$	no	YES	???
$1,3,6$	$A_1 \times A_2$	no	YES	???
$1,3,7$	$A_1 \times A_2$	no	YES	???
$1,3,8$	$A_1 \times A_2$	no	YES	???
$1,4,5$	$A_1 \times A_2$	no	YES	???
$1,5,6$	$A_1 \times A_2$	no	YES	???
$1,6,7$	$A_1 \times A_2$	no	YES	???
$1,7,8$	$A_1 \times A_2$	no	YES	???
$2,4,6$	$A_1 \times A_2$	no	YES	???
$2,4,7$	$A_1 \times A_2$	no	YES	???
$2,4,8$	$A_1 \times A_2$	no	YES	???
$2,5,6$	$A_1 \times A_2$	no	YES	???
$2,6,7$	$A_1 \times A_2$	no	YES	???
$2,7,8$	$A_1 \times A_2$	no	YES	???
$3,4,6$	$A_1 \times A_2$	no	YES	???
$3,4,7$	$A_1 \times A_2$	no	YES	???
$3,4,8$	$A_1 \times A_2$	no	YES	???
$3,5,6$	$A_1 \times A_2$	no	YES	???
$3,6,7$	$A_1 \times A_2$	no	YES	???

$3, 7, 8$	$A_1 \times A_2$	no	YES	???
$4, 5, 7$	$A_1 \times A_2$	no	YES	???
$4, 5, 8$	$A_1 \times A_2$	no	YES	???
$4, 6, 7$	$A_1 \times A_2$	no	YES	???
$4, 7, 8$	$A_1 \times A_2$	no	YES	???
$5, 6, 8$	$A_1 \times A_2$	no	YES	???
$5, 7, 8$	$A_1 \times A_2$	no	YES	???
$1, 2, 4, 5$	$A_1 \times A_3$	no	YES	???
$1, 3, 4, 6$	$A_1 \times A_3$	no	YES	???
$1, 3, 4, 7$	$A_1 \times A_3$	no	YES	???
$1, 3, 4, 8$	$A_1 \times A_3$	no	YES	???
$1, 4, 5, 6$	$A_1 \times A_3$	no	YES	???
$1, 5, 6, 7$	$A_1 \times A_3$	no	YES	???
$1, 6, 7, 8$	$A_1 \times A_3$	no	YES	???
$2, 3, 4, 6$	$A_1 \times A_3$	no	YES	???
$2, 3, 4, 7$	$A_1 \times A_3$	no	YES	???
$2, 3, 4, 8$	$A_1 \times A_3$	no	YES	???
$2, 4, 5, 7$	$A_1 \times A_3$	no	YES	???
$2, 4, 5, 8$	$A_1 \times A_3$	no	YES	???
$2, 5, 6, 7$	$A_1 \times A_3$	no	YES	???
$2, 6, 7, 8$	$A_1 \times A_3$	no	YES	???
$3, 4, 5, 7$	$A_1 \times A_3$	no	YES	???
$3, 4, 5, 8$	$A_1 \times A_3$	no	YES	???
$3, 5, 6, 7$	$A_1 \times A_3$	no	YES	???
$3, 6, 7, 8$	$A_1 \times A_3$	no	YES	???
$4, 5, 6, 8$	$A_1 \times A_3$	no	YES	???
$4, 6, 7, 8$	$A_1 \times A_3$	no	YES	???
$1, 2, 3, 4, 6$	$A_1 \times A_4$	no	YES	???
$1, 2, 3, 4, 7$	$A_1 \times A_4$	no	YES	???
$1, 2, 3, 4, 8$	$A_1 \times A_4$	no	YES	???
$1, 2, 4, 5, 6$	$A_1 \times A_4$	no	YES	???
$1, 3, 4, 5, 7$	$A_1 \times A_4$	no	YES	???
$1, 3, 4, 5, 8$	$A_1 \times A_4$	no	YES	???
$1, 4, 5, 6, 7$	$A_1 \times A_4$	no	YES	???
$1, 5, 6, 7, 8$	$A_1 \times A_4$	no	YES	???
$2, 4, 5, 6, 8$	$A_1 \times A_4$	no	YES	???
$2, 5, 6, 7, 8$	$A_1 \times A_4$	no	YES	???
$3, 4, 5, 6, 8$	$A_1 \times A_4$	no	YES	???
$3, 5, 6, 7, 8$	$A_1 \times A_4$	no	YES	???
$1, 2, 4, 5, 6, 7$	$A_1 \times A_5$	no	YES	???
$1, 3, 4, 5, 6, 8$	$A_1 \times A_5$	no	YES	???
$1, 4, 5, 6, 7, 8$	$A_1 \times A_5$	no	YES	???
$1, 2, 4, 5, 6, 7, 8$	$A_1 \times A_6$	no	YES	???
$2, 3, 4, 5, 7$	$A_1 \times D_4$	no	no	(???)
$2, 3, 4, 5, 8$	$A_1 \times D_4$	no	no	(???)
$1, 2, 3, 4, 5, 7$	$A_1 \times D_5$	no	no	(???)

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$1, 2, 3, 4, 5, 8$	$A_1 \times D_5$	no	no	(???)
$2, 3, 4, 5, 6, 8$	$A_1 \times D_5$	no	no	(???)
$1, 2, 3, 4, 5, 6, 8$	$A_1 \times E_6$	no	YES	???
$1, 3, 5, 6$	$A_2 \times A_2$	no	YES	???
$1, 3, 6, 7$	$A_2 \times A_2$	no	YES	???
$1, 3, 7, 8$	$A_2 \times A_2$	no	YES	???
$2, 4, 6, 7$	$A_2 \times A_2$	no	YES	???
$2, 4, 7, 8$	$A_2 \times A_2$	no	YES	???
$3, 4, 6, 7$	$A_2 \times A_2$	no	YES	???
$3, 4, 7, 8$	$A_2 \times A_2$	no	YES	???
$4, 5, 7, 8$	$A_2 \times A_2$	no	YES	???
$1, 3, 4, 6, 7$	$A_2 \times A_3$	no	YES	???
$1, 3, 4, 7, 8$	$A_2 \times A_3$	no	YES	???
$1, 3, 5, 6, 7$	$A_2 \times A_3$	no	YES	???
$1, 3, 6, 7, 8$	$A_2 \times A_3$	no	YES	???
$2, 3, 4, 6, 7$	$A_2 \times A_3$	no	YES	???
$2, 3, 4, 7, 8$	$A_2 \times A_3$	no	YES	???
$2, 4, 5, 7, 8$	$A_2 \times A_3$	no	YES	???
$2, 4, 6, 7, 8$	$A_2 \times A_3$	no	YES	???
$3, 4, 5, 7, 8$	$A_2 \times A_3$	no	YES	???
$3, 4, 6, 7, 8$	$A_2 \times A_3$	no	YES	???
$1, 2, 3, 4, 6, 7$	$A_2 \times A_4$	no	YES	???
$1, 2, 3, 4, 7, 8$	$A_2 \times A_4$	no	YES	???
$1, 3, 4, 5, 7, 8$	$A_2 \times A_4$	no	YES	???
$1, 3, 5, 6, 7, 8$	$A_2 \times A_4$	no	YES	???
$2, 3, 4, 5, 7, 8$	$A_2 \times D_4$	no	no	(???)
$1, 2, 3, 4, 5, 7, 8$	$A_2 \times D_5$	no	no	(???)
$1, 3, 4, 6, 7, 8$	$A_3 \times A_3$	no	YES	???
$2, 3, 4, 6, 7, 8$	$A_3 \times A_3$	no	YES	???
$1, 2, 3, 4, 6, 7, 8$	$A_3 \times A_4$	no	YES	???
$1, 2, 5$	$A_1 \times A_1 \times A_1$	no	YES	???
$1, 2, 6$	$A_1 \times A_1 \times A_1$	no	YES	???
$1, 2, 7$	$A_1 \times A_1 \times A_1$	no	YES	???
$1, 2, 8$	$A_1 \times A_1 \times A_1$	no	YES	???
$1, 4, 6$	$A_1 \times A_1 \times A_1$	no	YES	???
$1, 4, 7$	$A_1 \times A_1 \times A_1$	no	YES	???
$1, 4, 8$	$A_1 \times A_1 \times A_1$	no	YES	???
$1, 5, 7$	$A_1 \times A_1 \times A_1$	no	YES	???
$1, 5, 8$	$A_1 \times A_1 \times A_1$	no	YES	???
$1, 6, 8$	$A_1 \times A_1 \times A_1$	no	YES	???
$2, 3, 5$	$A_1 \times A_1 \times A_1$	no	YES	???
$2, 3, 6$	$A_1 \times A_1 \times A_1$	no	YES	???
$2, 3, 7$	$A_1 \times A_1 \times A_1$	no	YES	???
$2, 3, 8$	$A_1 \times A_1 \times A_1$	no	YES	???
$2, 5, 7$	$A_1 \times A_1 \times A_1$	no	YES	???
$2, 5, 8$	$A_1 \times A_1 \times A_1$	no	YES	???

$2, 6, 8$	$A_1 \times A_1 \times A_1$	no	YES	???
$3, 5, 7$	$A_1 \times A_1 \times A_1$	no	YES	???
$3, 5, 8$	$A_1 \times A_1 \times A_1$	no	YES	???
$3, 6, 8$	$A_1 \times A_1 \times A_1$	no	YES	???
$4, 6, 8$	$A_1 \times A_1 \times A_1$	no	YES	???
$1, 2, 3, 5$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 2, 3, 6$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 2, 3, 7$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 2, 3, 8$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 2, 4, 6$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 2, 4, 7$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 2, 4, 8$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 2, 5, 6$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 2, 6, 7$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 2, 7, 8$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 3, 5, 7$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 3, 5, 8$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 3, 6, 8$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 4, 5, 7$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 4, 5, 8$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 4, 6, 7$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 4, 7, 8$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 5, 6, 8$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 5, 7, 8$	$A_1 \times A_1 \times A_2$	no	YES	???
$2, 3, 5, 6$	$A_1 \times A_1 \times A_2$	no	YES	???
$2, 3, 6, 7$	$A_1 \times A_1 \times A_2$	no	YES	???
$2, 3, 7, 8$	$A_1 \times A_1 \times A_2$	no	YES	???
$2, 4, 6, 8$	$A_1 \times A_1 \times A_2$	no	YES	???
$2, 5, 6, 8$	$A_1 \times A_1 \times A_2$	no	YES	???
$2, 5, 7, 8$	$A_1 \times A_1 \times A_2$	no	YES	???
$3, 4, 6, 8$	$A_1 \times A_1 \times A_2$	no	YES	???
$3, 5, 6, 8$	$A_1 \times A_1 \times A_2$	no	YES	???
$3, 5, 7, 8$	$A_1 \times A_1 \times A_2$	no	YES	???
$1, 2, 4, 5, 7$	$A_1 \times A_1 \times A_3$	no	YES	???
$1, 2, 4, 5, 8$	$A_1 \times A_1 \times A_3$	no	YES	???
$1, 2, 5, 6, 7$	$A_1 \times A_1 \times A_3$	no	YES	???
$1, 2, 6, 7, 8$	$A_1 \times A_1 \times A_3$	no	YES	???
$1, 3, 4, 6, 8$	$A_1 \times A_1 \times A_3$	no	YES	???
$1, 4, 5, 6, 8$	$A_1 \times A_1 \times A_3$	no	YES	???
$1, 4, 6, 7, 8$	$A_1 \times A_1 \times A_3$	no	YES	???
$2, 3, 4, 6, 8$	$A_1 \times A_1 \times A_3$	no	YES	???
$2, 3, 5, 6, 7$	$A_1 \times A_1 \times A_3$	no	YES	???
$2, 3, 6, 7, 8$	$A_1 \times A_1 \times A_3$	no	YES	???
$1, 2, 3, 4, 6, 8$	$A_1 \times A_1 \times A_4$	no	YES	???
$1, 2, 4, 5, 6, 8$	$A_1 \times A_1 \times A_4$	no	YES	???
$1, 2, 5, 6, 7, 8$	$A_1 \times A_1 \times A_4$	no	YES	???

$2,3,5,6,7,8$	$A_1 \times A_1 \times A_4$	no	YES	???
$1,2,3,5,6$	$A_1 \times A_2 \times A_2$	no	YES	???
$1,2,3,6,7$	$A_1 \times A_2 \times A_2$	no	YES	???
$1,2,3,7,8$	$A_1 \times A_2 \times A_2$	no	YES	???
$1,2,4,6,7$	$A_1 \times A_2 \times A_2$	no	YES	???
$1,2,4,7,8$	$A_1 \times A_2 \times A_2$	no	YES	???
$1,3,5,6,8$	$A_1 \times A_2 \times A_2$	no	YES	???
$1,3,5,7,8$	$A_1 \times A_2 \times A_2$	no	YES	???
$1,4,5,7,8$	$A_1 \times A_2 \times A_2$	no	YES	???
$1,2,3,5,6,7$	$A_1 \times A_2 \times A_3$	no	YES	???
$1,2,3,6,7,8$	$A_1 \times A_2 \times A_3$	no	YES	???
$1,2,4,5,7,8$	$A_1 \times A_2 \times A_3$	no	YES	???
$1,2,4,6,7,8$	$A_1 \times A_2 \times A_3$	no	YES	???
$1,2,3,5,6,7,8$	$A_1 \times A_2 \times A_4$	no	YES	???
$1,2,5,7$	$A_1 \times A_1 \times A_1 \times A_1$	no	YES	???
$1,2,5,8$	$A_1 \times A_1 \times A_1 \times A_1$	no	YES	???
$1,2,6,8$	$A_1 \times A_1 \times A_1 \times A_1$	no	YES	???
$1,4,6,8$	$A_1 \times A_1 \times A_1 \times A_1$	no	YES	???
$2,3,5,7$	$A_1 \times A_1 \times A_1 \times A_1$	no	YES	???
$2,3,5,8$	$A_1 \times A_1 \times A_1 \times A_1$	no	YES	???
$2,3,6,8$	$A_1 \times A_1 \times A_1 \times A_1$	no	YES	???
$1,2,3,5,7$	$A_1 \times A_1 \times A_1 \times A_2$	no	YES	???
$1,2,3,5,8$	$A_1 \times A_1 \times A_1 \times A_2$	no	YES	???
$1,2,3,6,8$	$A_1 \times A_1 \times A_1 \times A_2$	no	YES	???
$1,2,4,6,8$	$A_1 \times A_1 \times A_1 \times A_2$	no	YES	???
$1,2,5,6,8$	$A_1 \times A_1 \times A_1 \times A_2$	no	YES	???
$1,2,5,7,8$	$A_1 \times A_1 \times A_1 \times A_2$	no	YES	???
$2,3,5,6,8$	$A_1 \times A_1 \times A_1 \times A_2$	no	YES	???
$2,3,5,7,8$	$A_1 \times A_1 \times A_1 \times A_2$	no	YES	???
$1,2,3,5,6,8$	$A_1 \times A_1 \times A_2 \times A_2$	no	YES	???
$1,2,3,5,7,8$	$A_1 \times A_1 \times A_2 \times A_2$	no	YES	???