
Resolution of Kronecker Squares in $Sp(16, R)$

$$\begin{array}{l}
\langle 1; (0) \rangle \otimes \{2\} \\
\langle 1; (0) \rangle \otimes \{1^2\} \\
\langle 1; (1) \rangle \otimes \{2\} \\
\langle 1; (1) \rangle \otimes \{1^2\} \\
\langle 1; (2) \rangle \otimes \{2\} \\
\langle 1; (2) \rangle \otimes \{1^2\} \\
\langle 1; (1^2) \rangle \otimes \{2\} \\
\langle 1; (1^2) \rangle \otimes \{1^2\}
\end{array}
\begin{array}{l}
\langle 2; (0) \rangle \\
+ \langle 2; (8) \rangle \\
\langle 2; (2) \rangle \\
\langle 2; (2) \rangle \\
+ \langle 2; (53) \rangle \\
+ \langle 2; (73) \rangle \\
\langle 2; (1^2) \rangle \\
+ \langle 2; (41^2) \rangle \\
+ 2 \langle 2; (62) \rangle \\
+ \langle 2; (91) \rangle \\
\langle 2; (2^2) \rangle \\
+ \langle 2; (51) \rangle \\
+ \langle 2; (8) \rangle \\
\langle 2; (31) \rangle \\
+ \langle 2; (51) \rangle \\
+ \langle 2; (81^2) \rangle \\
\langle 2; (31) \rangle \\
+ \langle 2; (61^2) \rangle \\
+ \langle 2; (91) \rangle \\
\langle 2; (1^4) \rangle \\
+ \langle 2; (81^2) \rangle \\
\langle 2; (21^2) \rangle
\end{array}
\begin{array}{l}
+ \langle 2; (2^2) \rangle \\
+ \langle 2; (42) \rangle \\
+ \langle 2; (21^2) \rangle \\
+ \langle 2; (6) \rangle \\
+ \langle 2; (31) \rangle \\
+ \langle 2; (6) \rangle \\
+ 2 \langle 2; (82) \rangle \\
+ \langle 2; (2^2) \rangle \\
+ \langle 2; (4^2) \rangle \\
+ \langle 2; (71) \rangle \\
+ \langle 2; (71) \rangle \\
+ \langle 2; (81^2) \rangle \\
+ \langle 2; (3^2) \rangle \\
+ \langle 2; (4) \rangle \\
+ \langle 2; (5^2) \rangle \\
+ \langle 2; (73) \rangle \\
+ \langle 2; (4) \rangle \\
+ \langle 2; (51) \rangle \\
+ 2 \langle 2; (62) \rangle \\
+ \langle 2; (91) \rangle \\
+ \langle 2; (3^2) \rangle \\
+ \langle 2; (4) \rangle \\
+ \langle 2; (51) \rangle \\
+ 2 \langle 2; (62) \rangle \\
+ \langle 2; (91) \rangle \\
+ \langle 2; (31) \rangle \\
+ \langle 2; (42) \rangle \\
+ \langle 2; (51) \rangle \\
+ \langle 2; (41^2) \rangle \\
+ \langle 2; (2^2) \rangle \\
+ \langle 2; (42) \rangle \\
+ \langle 2; (42) \rangle \\
+ \langle 2; (61^2) \rangle \\
+ \langle 2; (64) \rangle \\
+ \langle 2; (64) \rangle \\
+ \langle 2; (82) \rangle
\end{array}
\begin{array}{l}
+ \langle 2; (4) \rangle \\
+ \langle 2; (4^2) \rangle \\
+ \langle 2; (42) \rangle \\
+ 2 \langle 2; (64) \rangle \\
+ \langle 2; (10) \rangle \\
+ \langle 2; (31) \rangle \\
+ \langle 2; (61^2) \rangle \\
+ \langle 2; (91) \rangle \\
+ \langle 2; (31) \rangle \\
+ \langle 2; (51) \rangle \\
+ \langle 2; (73) \rangle \\
+ \langle 2; (41^2) \rangle \\
+ 2 \langle 2; (62) \rangle \\
+ \langle 2; (71) \rangle \\
+ \langle 2; (41^2) \rangle \\
+ \langle 2; (4^2) \rangle \\
+ \langle 2; (62) \rangle \\
+ \langle 2; (61^2) \rangle \\
+ \langle 2; (64) \rangle \\
+ \langle 2; (64) \rangle \\
+ \langle 2; (82) \rangle
\end{array}
\begin{array}{l}
+ \langle 2; (62) \rangle \\
+ \langle 2; (51) \rangle \\
+ \langle 2; (71) \rangle \\
+ \langle 2; (4) \rangle \\
+ \langle 2; (5^2) \rangle \\
+ \langle 2; (81^2) \rangle \\
+ \langle 2; (4^2) \rangle \\
+ \langle 2; (73) \rangle \\
+ 2 \langle 2; (82) \rangle \\
+ \langle 2; (62) \rangle \\
+ \langle 2; (82) \rangle
\end{array}$$

$$\begin{array}{l}
\langle s1; (3) \rangle \otimes \{2\} \quad \langle 3; (3^2) \rangle \quad + \langle 3; (42) \rangle \quad + \langle 3; (431) \rangle \quad + 2 \langle 3; (4^2) \rangle \quad + \langle 3; (521) \rangle \\
\quad + 2 \langle 3; (53) \rangle \quad + \langle 3; (531^2) \rangle \quad + \langle 3; (532) \rangle \quad + 2 \langle 3; (541) \rangle \quad + \langle 3; (6) \rangle \\
\quad + \langle 3; (61^2) \rangle \quad + \langle 3; (62) \rangle \quad + 2 \langle 3; (62^2) \rangle \quad + 2 \langle 3; (631) \rangle \quad + 3 \langle 3; (64) \rangle \\
\quad + \langle 3; (71) \rangle \quad + 2 \langle 3; (721) \rangle \quad + 2 \langle 3; (73) \rangle \quad + 3 \langle 3; (82) \rangle \quad + \langle 3; (91) \rangle \\
\quad + \langle 3; (10) \rangle \\
\\
\langle s1; (3) \rangle \otimes \{1^2\} \quad \langle 3; (3^2) \rangle \quad + \langle 3; (42^2) \rangle \quad + \langle 3; (431) \rangle \quad + \langle 3; (43^2) \rangle \quad + \langle 3; (4^2) \rangle \\
\quad + \langle 3; (4^2 1^2) \rangle \quad + \langle 3; (51) \rangle \quad + \langle 3; (521) \rangle \quad + \langle 3; (53) \rangle \quad + 2 \langle 3; (532) \rangle \\
\quad + 2 \langle 3; (541) \rangle \quad + 2 \langle 3; (5^2) \rangle \quad + 2 \langle 3; (62) \rangle \quad + \langle 3; (621^2) \rangle \quad + 3 \langle 3; (631) \rangle \\
\quad + \langle 3; (64) \rangle \quad + \langle 3; (71) \rangle \quad + 2 \langle 3; (721) \rangle \quad + 3 \langle 3; (73) \rangle \quad + \langle 3; (8) \rangle \\
\quad + \langle 3; (81^2) \rangle \quad + \langle 3; (82) \rangle \quad + \langle 3; (91) \rangle \\
\\
\langle s1; (21) \rangle \otimes \{2\} \quad \langle 3; (3^3) \rangle \quad + \langle 3; (31^3) \rangle \quad + \langle 3; (321) \rangle \quad + \langle 3; (3^2 2) \rangle \quad + \langle 3; (42) \rangle \\
\quad + 2 \langle 3; (421^2) \rangle \quad + 2 \langle 3; (431) \rangle \quad + 2 \langle 3; (4^2) \rangle \quad + \langle 3; (51^3) \rangle \quad + 2 \langle 3; (521) \rangle \\
\quad + \langle 3; (53) \rangle \quad + 2 \langle 3; (531^2) \rangle \quad + \langle 3; (532) \rangle \quad + 2 \langle 3; (541) \rangle \quad + \langle 3; (61^2) \rangle \\
\quad + \langle 3; (61^4) \rangle \quad + \langle 3; (621^2) \rangle \quad + 3 \langle 3; (62^2) \rangle \quad + 2 \langle 3; (631) \rangle \quad + 2 \langle 3; (64) \rangle \\
\quad + \langle 3; (71^3) \rangle \quad + 2 \langle 3; (721) \rangle \quad + \langle 3; (73) \rangle \quad + \langle 3; (82) \rangle \\
\\
\langle s1; (21) \rangle \otimes \{1^2\} \quad \langle 3; (2^2 1^2) \rangle \quad + \langle 3; (321) \rangle \quad + \langle 3; (3^2) \rangle \quad + \langle 3; (3^2 1^2) \rangle \quad + \langle 3; (41^2) \rangle \\
\quad + \langle 3; (41^4) \rangle \quad + \langle 3; (421^2) \rangle \quad + 2 \langle 3; (4^2) \rangle \quad + \langle 3; (431) \rangle \quad + \langle 3; (43^2) \rangle \\
\quad + \langle 3; (4^2) \rangle \quad + 2 \langle 3; (4^2 1^2) \rangle \quad + \langle 3; (51^3) \rangle \quad + 2 \langle 3; (521) \rangle \quad + \langle 3; (53) \rangle \\
\quad + \langle 3; (531^2) \rangle \quad + 2 \langle 3; (532) \rangle \quad + 2 \langle 3; (541) \rangle \quad + \langle 3; (5^2) \rangle \quad + \langle 3; (62) \rangle \\
\quad + 3 \langle 3; (621^2) \rangle \quad + 3 \langle 3; (631) \rangle \quad + \langle 3; (71^3) \rangle \quad + 2 \langle 3; (721) \rangle \quad + \langle 3; (73) \rangle \\
\quad + \langle 3; (81^2) \rangle \\
\\
\langle s1; (1^3) \rangle \otimes \{2\} \quad \langle 3; (21^4) \rangle \quad + \langle 3; (2^3) \rangle \quad + \langle 3; (421^2) \rangle \quad + \langle 3; (4^2 2) \rangle \quad + \langle 3; (61^4) \rangle \\
\quad + \langle 3; (62^2) \rangle \\
\\
\langle s1; (1^3) \rangle \otimes \{1^2\} \quad \langle 3; (1^6) \rangle \quad + \langle 3; (2^2 1^2) \rangle \quad + \langle 3; (41^4) \rangle \quad + \langle 3; (42^2) \rangle \quad + \langle 3; (4^2 1^2) \rangle \\
\quad + \langle 3; (621^2) \rangle \\
\\
\langle s1; (4) \rangle \otimes \{2\} \quad \langle 3; (4^2) \rangle \quad + \langle 3; (532) \rangle \quad + \langle 3; (541) \rangle \quad + \langle 3; (5^2) \rangle \quad + \langle 3; (62) \rangle \\
\quad + \langle 3; (631) \rangle \quad + \langle 3; (64) \rangle \quad + \langle 3; (721) \rangle \quad + 2 \langle 3; (73) \rangle \quad + \langle 3; (8) \rangle \\
\quad + \langle 3; (81^2) \rangle \quad + \langle 3; (82) \rangle \quad + \langle 3; (91) \rangle \\
\\
\langle s1; (4) \rangle \otimes \{1^2\} \quad \langle 3; (4^2 2) \rangle \quad + \langle 3; (53) \rangle \quad + \langle 3; (541) \rangle \quad + \langle 3; (62^2) \rangle \quad + \langle 3; (631) \rangle \\
\quad + 2 \langle 3; (64) \rangle \quad + \langle 3; (71) \rangle \quad + \langle 3; (721) \rangle \quad + \langle 3; (73) \rangle \quad + 2 \langle 3; (82) \rangle \\
\quad + \langle 3; (91) \rangle \quad + \langle 3; (10) \rangle
\end{array}$$

$\langle 2; (0) \rangle \otimes \{2\}$	$\langle 4; (0) \rangle$ $+ \langle 4; (4^2) \rangle$	$+ \langle 4; (2^2) \rangle$ $+ \langle 4; (62) \rangle$	$+ \langle 4; (2^4) \rangle$ $+ \langle 4; (8) \rangle$	$+ \langle 4; (4) \rangle$	$+ \langle 4; (42^2) \rangle$
$\langle 2; (0) \rangle \otimes \{1^2\}$	$\langle 4; (2) \rangle$	$+ \langle 4; (2^3) \rangle$	$+ \langle 4; (42) \rangle$	$+ \langle 4; (6) \rangle$	
$\langle 2; (1) \rangle \otimes \{2\}$	$\langle 4; (2) \rangle$ $+ \langle 4; (321) \rangle$ $+ 2 \langle 4; (42^3) \rangle$ $+ \langle 4; (521) \rangle$ $+ \langle 4; (6) \rangle$ $+ \langle 4; (71) \rangle$ $+ \langle 4; (10) \rangle$	$+ \langle 4; (21^2) \rangle$ $+ \langle 4; (32^2 1) \rangle$ $+ \langle 4; (431) \rangle$ $+ \langle 4; (52^2 1) \rangle$ $+ \langle 4; (61^2) \rangle$ $+ \langle 4; (721) \rangle$	$+ \langle 4; (2^3) \rangle$ $+ \langle 4; (3^2 2) \rangle$ $+ \langle 4; (4321) \rangle$ $+ \langle 4; (53) \rangle$ $+ 2 \langle 4; (62^2) \rangle$ $+ \langle 4; (73) \rangle$	$+ \langle 4; (2^3 1^2) \rangle$ $+ 2 \langle 4; (42) \rangle$ $+ 2 \langle 4; (4^2 2) \rangle$ $+ \langle 4; (532) \rangle$ $+ \langle 4; (631) \rangle$ $+ 2 \langle 4; (82) \rangle$	$+ \langle 4; (31) \rangle$ $+ \langle 4; (421^2) \rangle$ $+ \langle 4; (51) \rangle$ $+ \langle 4; (541) \rangle$ $+ 2 \langle 4; (64) \rangle$ $+ \langle 4; (91) \rangle$
$\langle 2; (1) \rangle \otimes \{1^2\}$	$\langle 4; (1^2) \rangle$ $+ \langle 4; (321) \rangle$ $+ \langle 4; (41^2) \rangle$ $+ \langle 4; (43^2) \rangle$ $+ \langle 4; (52^2 1) \rangle$ $+ 2 \langle 4; (62) \rangle$ $+ \langle 4; (73) \rangle$	$+ \langle 4; (2^2) \rangle$ $+ \langle 4; (32^2 1) \rangle$ $+ 2 \langle 4; (42^2) \rangle$ $+ \langle 4; (4^2) \rangle$ $+ \langle 4; (53) \rangle$ $+ \langle 4; (621^2) \rangle$ $+ \langle 4; (8) \rangle$	$+ \langle 4; (2^2 1^2) \rangle$ $+ \langle 4; (3^2) \rangle$ $+ \langle 4; (42^2 1^2) \rangle$ $+ \langle 4; (4^2 1^2) \rangle$ $+ \langle 4; (532) \rangle$ $+ \langle 4; (631) \rangle$ $+ \langle 4; (81^2) \rangle$	$+ \langle 4; (2^4) \rangle$ $+ \langle 4; (3^2 2^2) \rangle$ $+ \langle 4; (431) \rangle$ $+ \langle 4; (51) \rangle$ $+ \langle 4; (541) \rangle$ $+ \langle 4; (71) \rangle$ $+ \langle 4; (91) \rangle$	$+ \langle 4; (31) \rangle$ $+ \langle 4; (4) \rangle$ $+ \langle 4; (4321) \rangle$ $+ \langle 4; (521) \rangle$ $+ \langle 4; (5^2) \rangle$ $+ \langle 4; (721) \rangle$
$\langle 2; (2) \rangle \otimes \{2\}$	$\langle 4; (2^2) \rangle$ $+ \langle 4; (3^2 1^2) \rangle$ $+ 3 \langle 4; (42^2) \rangle$ $+ 2 \langle 4; (4^2) \rangle$ $+ 2 \langle 4; (52^2 1) \rangle$ $+ \langle 4; (5^2) \rangle$ $+ \langle 4; (64) \rangle$ $+ \langle 4; (81^2) \rangle$	$+ \langle 4; (2^4) \rangle$ $+ \langle 4; (3^2 2^2) \rangle$ $+ \langle 4; (42^2 1^2) \rangle$ $+ \langle 4; (4^2 1^2) \rangle$ $+ \langle 4; (53) \rangle$ $+ 3 \langle 4; (62) \rangle$ $+ \langle 4; (71) \rangle$ $+ \langle 4; (82) \rangle$	$+ \langle 4; (321) \rangle$ $+ \langle 4; (4) \rangle$ $+ \langle 4; (431) \rangle$ $+ \langle 4; (4^2 2) \rangle$ $+ \langle 4; (531^2) \rangle$ $+ \langle 4; (621^2) \rangle$ $+ 2 \langle 4; (721) \rangle$ $+ \langle 4; (91) \rangle$	$+ \langle 4; (32^2 1) \rangle$ $+ \langle 4; (41^2) \rangle$ $+ 2 \langle 4; (4321) \rangle$ $+ \langle 4; (51) \rangle$ $+ 3 \langle 4; (532) \rangle$ $+ \langle 4; (62^2) \rangle$ $+ 2 \langle 4; (73) \rangle$	$+ \langle 4; (3^2) \rangle$ $+ \langle 4; (42) \rangle$ $+ \langle 4; (43^2) \rangle$ $+ 2 \langle 4; (521) \rangle$ $+ 2 \langle 4; (541) \rangle$ $+ 3 \langle 4; (631) \rangle$ $+ \langle 4; (8) \rangle$
$\langle 2; (2) \rangle \otimes \{1^2\}$	$\langle 4; (2^3) \rangle$ $+ \langle 4; (3^2 21^2) \rangle$ $+ 2 \langle 4; (431) \rangle$ $+ 2 \langle 4; (52^2 1) \rangle$ $+ \langle 4; (6) \rangle$ $+ 3 \langle 4; (64) \rangle$ $+ \langle 4; (91) \rangle$	$+ \langle 4; (31) \rangle$ $+ 2 \langle 4; (42) \rangle$ $+ 2 \langle 4; (4321) \rangle$ $+ 2 \langle 4; (53) \rangle$ $+ \langle 4; (61^2) \rangle$ $+ \langle 4; (71) \rangle$ $+ \langle 4; (10) \rangle$	$+ \langle 4; (321) \rangle$ $+ \langle 4; (421^2) \rangle$ $+ 3 \langle 4; (4^2 2) \rangle$ $+ \langle 4; (531^2) \rangle$ $+ \langle 4; (62) \rangle$ $+ 2 \langle 4; (721) \rangle$	$+ \langle 4; (32^2 1) \rangle$ $+ \langle 4; (42^2) \rangle$ $+ \langle 4; (51) \rangle$ $+ 2 \langle 4; (532) \rangle$ $+ 4 \langle 4; (62^2) \rangle$ $+ 2 \langle 4; (73) \rangle$	$+ \langle 4; (3^2 2) \rangle$ $+ 2 \langle 4; (42^3) \rangle$ $+ 2 \langle 4; (521) \rangle$ $+ 2 \langle 4; (541) \rangle$ $+ 2 \langle 4; (631) \rangle$ $+ 3 \langle 4; (82) \rangle$
$\langle 2; (1^2) \rangle \otimes \{2\}$	$\langle 4; (1^4) \rangle$ $+ \langle 4; (31^3) \rangle$ $+ \langle 4; (3^2 2^2) \rangle$ $+ 2 \langle 4; (42^2 1^2) \rangle$ $+ \langle 4; (4^2) \rangle$ $+ \langle 4; (52^2 1) \rangle$ $+ 2 \langle 4; (621^2) \rangle$	$+ \langle 4; (2^2) \rangle$ $+ \langle 4; (321) \rangle$ $+ \langle 4; (3^3 1) \rangle$ $+ \langle 4; (431) \rangle$ $+ \langle 4; (4^2 1^2) \rangle$ $+ 2 \langle 4; (531^2) \rangle$ $+ \langle 4; (631) \rangle$	$+ \langle 4; (2^2 1^2) \rangle$ $+ \langle 4; (321^3) \rangle$ $+ \langle 4; (41^2) \rangle$ $+ \langle 4; (431^3) \rangle$ $+ \langle 4; (51^3) \rangle$ $+ \langle 4; (532) \rangle$ $+ \langle 4; (71^3) \rangle$	$+ \langle 4; (2^2 1^4) \rangle$ $+ \langle 4; (32^2 1) \rangle$ $+ \langle 4; (41^4) \rangle$ $+ 2 \langle 4; (4321) \rangle$ $+ \langle 4; (521) \rangle$ $+ \langle 4; (541) \rangle$ $+ \langle 4; (721) \rangle$	$+ \langle 4; (2^4) \rangle$ $+ 2 \langle 4; (3^2 1^2) \rangle$ $+ 2 \langle 4; (42^2) \rangle$ $+ \langle 4; (43^2) \rangle$ $+ \langle 4; (521^3) \rangle$ $+ \langle 4; (62) \rangle$ $+ \langle 4; (81^2) \rangle$
$\langle 2; (1^2) \rangle \otimes \{1^2\}$	$\langle 4; (21^2) \rangle$ $+ \langle 4; (321) \rangle$ $+ \langle 4; (3^2 21^2) \rangle$ $+ 2 \langle 4; (42^3) \rangle$ $+ \langle 4; (51^3) \rangle$ $+ \langle 4; (532) \rangle$ $+ \langle 4; (631) \rangle$	$+ \langle 4; (21^4) \rangle$ $+ \langle 4; (321^3) \rangle$ $+ \langle 4; (3^3 1) \rangle$ $+ \langle 4; (431) \rangle$ $+ \langle 4; (521) \rangle$ $+ \langle 4; (541) \rangle$ $+ \langle 4; (64) \rangle$	$+ \langle 4; (2^3) \rangle$ $+ \langle 4; (32^2 1) \rangle$ $+ \langle 4; (42) \rangle$ $+ \langle 4; (431^3) \rangle$ $+ \langle 4; (521^3) \rangle$ $+ \langle 4; (61^2) \rangle$ $+ \langle 4; (71^3) \rangle$	$+ \langle 4; (2^3 1^2) \rangle$ $+ \langle 4; (3^2 1^2) \rangle$ $+ 2 \langle 4; (421^2) \rangle$ $+ 2 \langle 4; (4321) \rangle$ $+ \langle 4; (52^2 1) \rangle$ $+ \langle 4; (61^4) \rangle$ $+ \langle 4; (721) \rangle$	$+ \langle 4; (31^3) \rangle$ $+ \langle 4; (3^2 2) \rangle$ $+ \langle 4; (421^4) \rangle$ $+ 2 \langle 4; (4^2 2) \rangle$ $+ 2 \langle 4; (531^2) \rangle$ $+ 2 \langle 4; (62^2) \rangle$ $+ \langle 4; (82) \rangle$

$\langle 2; (3) \rangle \otimes \{2\}$	$\langle 4; (3^2 2) \rangle$ + $\langle 2 \langle 4; (4^2 2) \rangle$ + $\langle 2 \langle 4; (532) \rangle$ + $\langle 3 \langle 4; (62^2) \rangle$ + $\langle 2 \langle 4; (73) \rangle$	+ $\langle 4; (42) \rangle$ + $\langle 4; (521) \rangle$ + $\langle 2 \langle 4; (541) \rangle$ + $\langle 2 \langle 4; (631) \rangle$ + $\langle 3 \langle 4; (82) \rangle$	+ $\langle 4; (42^3) \rangle$ + $\langle 4; (52^2 1) \rangle$ + $\langle 4; (6) \rangle$ + $\langle 3 \langle 4; (64) \rangle$ + $\langle 4; (91) \rangle$	+ $\langle 4; (431) \rangle$ + $\langle 2 \langle 4; (53) \rangle$ + $\langle 4; (61^2) \rangle$ + $\langle 4; (71) \rangle$ + $\langle 4; (10) \rangle$	+ $\langle 4; (4321) \rangle$ + $\langle 4; (531^2) \rangle$ + $\langle 4; (62) \rangle$ + $\langle 2 \langle 4; (721) \rangle$
$\langle 2; (3) \rangle \otimes \{1^2\}$	$\langle 4; (3^2) \rangle$ + $\langle 4; (43^2) \rangle$ + $\langle 4; (52^2 1) \rangle$ + $\langle 2 \langle 4; (62) \rangle$ + $\langle 4; (71) \rangle$ + $\langle 4; (82) \rangle$	+ $\langle 4; (3^2 2^2) \rangle$ + $\langle 4; (4^2) \rangle$ + $\langle 4; (53) \rangle$ + $\langle 4; (621^2) \rangle$ + $\langle 2 \langle 4; (721) \rangle$ + $\langle 4; (91) \rangle$	+ $\langle 4; (42^2) \rangle$ + $\langle 4; (4^2 1^2) \rangle$ + $\langle 3 \langle 4; (532) \rangle$ + $\langle 4; (62^2) \rangle$ + $\langle 3 \langle 4; (73) \rangle$	+ $\langle 4; (431) \rangle$ + $\langle 4; (51) \rangle$ + $\langle 2 \langle 4; (541) \rangle$ + $\langle 3 \langle 4; (631) \rangle$ + $\langle 4; (8) \rangle$	+ $\langle 4; (4321) \rangle$ + $\langle 4; (521) \rangle$ + $\langle 2 \langle 4; (5^2) \rangle$ + $\langle 4; (64) \rangle$ + $\langle 4; (81^2) \rangle$
$\langle 2; (21) \rangle \otimes \{2\}$	$\langle 4; (2^3) \rangle$ + $\langle 2 \langle 4; (32^2 1) \rangle$ + $\langle 4; (42) \rangle$ + $\langle 3 \langle 4; (42^3) \rangle$ + $\langle 4; (4^2 1^2) \rangle$ + $\langle 4 \langle 4; (52^2 1) \rangle$ + $\langle 4; (61^2) \rangle$ + $\langle 2 \langle 4; (64) \rangle$	+ $\langle 4; (2^3 1^2) \rangle$ + $\langle 4; (3^2 1^2) \rangle$ + $\langle 3 \langle 4; (421^2) \rangle$ + $\langle 3 \langle 4; (431) \rangle$ + $\langle 4 \langle 4; (4^2 2) \rangle$ + $\langle 4; (53) \rangle$ + $\langle 4; (61^4) \rangle$ + $\langle 4; (71^3) \rangle$	+ $\langle 4; (31^3) \rangle$ + $\langle 2 \langle 4; (3^2 2) \rangle$ + $\langle 4; (421^4) \rangle$ + $\langle 3 \langle 4; (431^3) \rangle$ + $\langle 4; (51^3) \rangle$ + $\langle 5 \langle 4; (531^2) \rangle$ + $\langle 2 \langle 4; (621^2) \rangle$ + $\langle 2 \langle 4; (721) \rangle$	+ $\langle 4; (321) \rangle$ + $\langle 2 \langle 4; (3^2 21^2) \rangle$ + $\langle 4; (42^2) \rangle$ + $\langle 5 \langle 4; (4321) \rangle$ + $\langle 2 \langle 4; (521) \rangle$ + $\langle 4 \langle 4; (532) \rangle$ + $\langle 4 \langle 4; (62^2) \rangle$ + $\langle 4; (73) \rangle$	+ $\langle 4; (321^3) \rangle$ + $\langle 2 \langle 4; (3^3 1) \rangle$ + $\langle 4; (42^2 1^2) \rangle$ + $\langle 4; (43^2) \rangle$ + $\langle 2 \langle 4; (521^3) \rangle$ + $\langle 3 \langle 4; (541) \rangle$ + $\langle 3 \langle 4; (631) \rangle$ + $\langle 4; (82) \rangle$
$\langle 2; (21) \rangle \otimes \{1^2\}$	$\langle 4; (2^2 1^2) \rangle$ + $\langle 4; (3^2) \rangle$ + $\langle 2 \langle 4; (3^2 2^2) \rangle$ + $\langle 3 \langle 4; (42^2) \rangle$ + $\langle 3 \langle 4; (43^2) \rangle$ + $\langle 2 \langle 4; (521) \rangle$ + $\langle 5 \langle 4; (532) \rangle$ + $\langle 4; (62^2) \rangle$ + $\langle 4; (81^2) \rangle$	+ $\langle 4; (2^4) \rangle$ + $\langle 2 \langle 4; (3^2 1^2) \rangle$ + $\langle 4; (3^3 1) \rangle$ + $\langle 3 \langle 4; (42^2 1^2) \rangle$ + $\langle 4; (4^2) \rangle$ + $\langle 2 \langle 4; (521^3) \rangle$ + $\langle 3 \langle 4; (541) \rangle$ + $\langle 4 \langle 4; (631) \rangle$	+ $\langle 4; (321) \rangle$ + $\langle 4; (3^2 1^4) \rangle$ + $\langle 4; (41^2) \rangle$ + $\langle 2 \langle 4; (431) \rangle$ + $\langle 4 \langle 4; (4^2 1^2) \rangle$ + $\langle 4 \langle 4; (52^2 1) \rangle$ + $\langle 4; (5^2) \rangle$ + $\langle 4; (71^3) \rangle$	+ $\langle 4; (321^3) \rangle$ + $\langle 4; (3^2 2) \rangle$ + $\langle 4; (41^4) \rangle$ + $\langle 2 \langle 4; (431^3) \rangle$ + $\langle 4; (4^2 2) \rangle$ + $\langle 4; (53) \rangle$ + $\langle 4; (62) \rangle$ + $\langle 2 \langle 4; (721) \rangle$	+ $\langle 2 \langle 4; (32^2 1) \rangle$ + $\langle 4; (3^2 21^2) \rangle$ + $\langle 2 \langle 4; (421^2) \rangle$ + $\langle 5 \langle 4; (4321) \rangle$ + $\langle 4; (51^3) \rangle$ + $\langle 4 \langle 4; (531^2) \rangle$ + $\langle 4 \langle 4; (621^2) \rangle$ + $\langle 4; (73) \rangle$
$\langle 2; (1^3) \rangle \otimes \{2\}$	$\langle 4; (21^4) \rangle$ + $\langle 4; (32^2 1) \rangle$ + $\langle 4; (431^3) \rangle$ + $\langle 4; (52^2 1) \rangle$	+ $\langle 4; (2^3) \rangle$ + $\langle 4; (3^2 21^2) \rangle$ + $\langle 4; (4321) \rangle$ + $\langle 4; (61^4) \rangle$	+ $\langle 4; (2^3 1^2) \rangle$ + $\langle 4; (421^2) \rangle$ + $\langle 4; (4^2 2) \rangle$ + $\langle 4; (62^2) \rangle$	+ $\langle 4; (31^5) \rangle$ + $\langle 2 \langle 4; (421^4) \rangle$ + $\langle 4; (51^5) \rangle$	+ $\langle 4; (321^3) \rangle$ + $\langle 2 \langle 4; (42^3) \rangle$ + $\langle 4; (521^3) \rangle$
$\langle 2; (1^3) \rangle \otimes \{2\}$	$\langle 4; (1^6) \rangle$ + $\langle 4; (321^3) \rangle$ + $\langle 4; (42^2) \rangle$ + $\langle 4; (51^5) \rangle$	+ $\langle 4; (2^2 1^2) \rangle$ + $\langle 4; (32^2 1) \rangle$ + $\langle 2 \langle 4; (42^2 1^2) \rangle$ + $\langle 4; (521^3) \rangle$	+ $\langle 4; (2^2 1^4) \rangle$ + $\langle 4; (3^2 1^4) \rangle$ + $\langle 4; (431^3) \rangle$ + $\langle 4; (52^2 1) \rangle$	+ $\langle 4; (2^4) \rangle$ + $\langle 4; (3^2 2^2) \rangle$ + $\langle 4; (4321) \rangle$ + $\langle 4; (621^2) \rangle$	+ $\langle 4; (31^5) \rangle$ + $\langle 4; (41^4) \rangle$ + $\langle 4; (4^2 1^2) \rangle$
$\langle 2; (4) \rangle \otimes \{2\}$	$\langle 4; (4^2) \rangle$ + $\langle 4; (631) \rangle$ + $\langle 4; (81^2) \rangle$	+ $\langle 4; (532) \rangle$ + $\langle 4; (64) \rangle$ + $\langle 4; (82) \rangle$	+ $\langle 4; (541) \rangle$ + $\langle 4; (721) \rangle$ + $\langle 4; (91) \rangle$	+ $\langle 4; (5^2) \rangle$ + $\langle 2 \langle 4; (73) \rangle$	+ $\langle 4; (62) \rangle$ + $\langle 4; (8) \rangle$
$\langle 2; (4) \rangle \otimes \{1^2\}$	$\langle 4; (4^2 2) \rangle$ + $\langle 2 \langle 4; (64) \rangle$ + $\langle 4; (91) \rangle$	+ $\langle 4; (53) \rangle$ + $\langle 4; (71) \rangle$ + $\langle 4; (10) \rangle$	+ $\langle 4; (541) \rangle$ + $\langle 4; (721) \rangle$	+ $\langle 4; (62^2) \rangle$ + $\langle 4; (73) \rangle$	+ $\langle 4; (631) \rangle$ + $\langle 2 \langle 4; (82) \rangle$

$$\begin{array}{l}
\langle 2; (31) \rangle \otimes \{2\} \\
\langle 2; (31) \rangle \otimes \{1^2\} \\
\langle 2; (2^2) \rangle \otimes \{2\} \\
\langle 2; (2^2) \rangle \otimes \{1^2\} \\
\langle 2; (21^2) \rangle \otimes \{2\} \\
\langle 2; (21^2) \rangle \otimes \{1^2\} \\
\langle 2; (1^4) \rangle \otimes \{2\} \\
\langle 2; (1^4) \rangle \otimes \{1^2\}
\end{array}
\begin{array}{l}
\langle 4; (3^2 1^2) \rangle \\
\langle 4; (3^2) \rangle \\
\langle 4; (4^2 1^2) \rangle \\
\langle 4; (5^2 2^1) \rangle \\
\langle 4; (6^2) \rangle \\
\langle 4; (71^3) \rangle \\
\langle 4; (3^2 2) \rangle \\
\langle 4; (431) \rangle \\
\langle 4; (4^2 2) \rangle \\
\langle 4; (531^2) \rangle \\
\langle 4; (621^2) \rangle \\
\langle 4; (721) \rangle \\
\langle 4; (2^4) \rangle \\
\langle 4; (4321) \rangle \\
\langle 4; (531^2) \rangle \\
\langle 4; (32^2 1) \rangle \\
\langle 4; (4321) \rangle \\
\langle 4; (541) \rangle \\
\langle 4; (2^3 1^4) \rangle \\
\langle 4; (3^2 21^2) \rangle \\
\langle 4; (431^3) \rangle \\
\langle 4; (52^2 1) \rangle \\
\langle 4; (1^8) \rangle \\
\langle 4; (21^6) \rangle
\end{array}
\begin{array}{l}
+ \langle 4; (3^2 2^2) \rangle \\
+ \langle 4; (431^3) \rangle \\
+ \langle 4; (4^2 2) \rangle \\
+ \langle 4; (531^2) \rangle \\
+ \langle 4; (621^2) \rangle \\
+ \langle 4; (721) \rangle \\
+ \langle 4; (3^2 21^2) \rangle \\
+ \langle 4; (431^3) \rangle \\
+ \langle 4; (521) \rangle \\
+ \langle 4; (532) \rangle \\
+ \langle 4; (62^2) \rangle \\
+ \langle 4; (73) \rangle \\
+ \langle 4; (3^2 1^2) \rangle \\
+ \langle 4; (43^2) \rangle \\
+ \langle 4; (532) \rangle \\
+ \langle 4; (3^3 1) \rangle \\
+ \langle 4; (4^2 2) \rangle \\
+ \langle 4; (62^2) \rangle \\
+ \langle 4; (2^4) \rangle \\
+ \langle 4; (3^2 2^2) \rangle \\
+ \langle 4; (43^2) \rangle \\
+ \langle 4; (532) \rangle \\
+ \langle 4; (2^4) \rangle \\
+ \langle 4; (3^2 2^2) \rangle \\
+ \langle 4; (3^2 1^4) \rangle \\
+ \langle 4; (421^2) \rangle \\
+ \langle 4; (4321) \rangle \\
+ \langle 4; (531^2) \rangle \\
+ \langle 4; (31^5) \rangle \\
+ \langle 4; (421^2) \rangle \\
+ \langle 4; (4321) \rangle \\
+ \langle 4; (531^2) \rangle \\
+ \langle 4; (2^2 1^4) \rangle \\
+ \langle 4; (2^3 1^2) \rangle
\end{array}
\begin{array}{l}
+ \langle 4; (3^3 1) \rangle \\
+ 3 \langle 4; (4321) \rangle \\
+ \langle 4; (51^3) \rangle \\
+ \langle 4; (532) \rangle \\
+ \langle 4; (62^2) \rangle \\
+ \langle 4; (73) \rangle \\
+ \langle 4; (3^3 1) \rangle \\
+ 3 \langle 4; (4321) \rangle \\
+ \langle 4; (521^3) \rangle \\
+ \langle 4; (541) \rangle \\
+ \langle 4; (631) \rangle \\
+ \langle 4; (82) \rangle \\
+ \langle 4; (3^2 2^2) \rangle \\
+ \langle 4; (4^2) \rangle \\
+ \langle 4; (541) \rangle \\
+ \langle 4; (42^3) \rangle \\
+ \langle 4; (52^2 1) \rangle \\
+ \langle 4; (64) \rangle \\
+ \langle 4; (321^3) \rangle \\
+ \langle 4; (41^4) \rangle \\
+ \langle 4; (431^3) \rangle \\
+ 2 \langle 4; (521^3) \rangle \\
+ \langle 4; (321^3) \rangle \\
+ 2 \langle 4; (421^4) \rangle \\
+ \langle 4; (4^2 2) \rangle \\
+ \langle 4; (532) \rangle \\
+ \langle 4; (321^3) \rangle \\
+ 2 \langle 4; (421^4) \rangle \\
+ \langle 4; (41^6) \rangle \\
+ \langle 4; (51^5) \rangle \\
+ \langle 4; (532) \rangle \\
+ \langle 4; (321^3) \rangle \\
+ 2 \langle 4; (421^4) \rangle \\
+ \langle 4; (2^4) \rangle \\
+ \langle 4; (421^4) \rangle
\end{array}
\begin{array}{l}
+ \langle 4; (42^2) \rangle \\
+ 2 \langle 4; (43^2) \rangle \\
+ \langle 4; (521) \rangle \\
+ 3 \langle 4; (541) \rangle \\
+ \langle 4; (631) \rangle \\
+ \langle 4; (81^2) \rangle \\
+ \langle 4; (421^2) \rangle \\
+ \langle 4; (43^2) \rangle \\
+ 2 \langle 4; (52^2 1) \rangle \\
+ \langle 4; (61^2) \rangle \\
+ 2 \langle 4; (64) \rangle \\
+ \langle 4; (42^2) \rangle \\
+ \langle 4; (4^2 1^2) \rangle \\
+ \langle 4; (631) \rangle \\
+ \langle 4; (32^2 1) \rangle \\
+ \langle 4; (41^6) \rangle \\
+ 2 \langle 4; (4321) \rangle \\
+ 2 \langle 4; (52^2 1) \rangle \\
+ \langle 4; (32^2 1) \rangle \\
+ \langle 4; (42^2 1^2) \rangle \\
+ \langle 4; (51^5) \rangle \\
+ \langle 4; (61^4) \rangle \\
+ \langle 4; (41^6) \rangle \\
+ \langle 4; (42^3) \rangle
\end{array}
\begin{array}{l}
+ \langle 4; (42^2 1^2) \rangle \\
+ \langle 4; (4^2) \rangle \\
+ \langle 4; (521^3) \rangle \\
+ \langle 4; (5^2) \rangle \\
+ \langle 4; (64) \rangle \\
+ \langle 4; (42^3) \rangle \\
+ \langle 4; (4^2 1^2) \rangle \\
+ \langle 4; (53) \rangle \\
+ \langle 4; (61^4) \rangle \\
+ \langle 4; (71^3) \rangle \\
+ \langle 4; (42^2 1^2) \rangle \\
+ \langle 4; (52^2 1) \rangle \\
+ \langle 4; (3^2 1^2) \rangle \\
+ \langle 4; (421^4) \rangle \\
+ \langle 4; (43^2) \rangle \\
+ \langle 4; (531^2) \rangle \\
+ \langle 4; (42^2 1^2) \rangle \\
+ 2 \langle 4; (42^3) \rangle \\
+ 2 \langle 4; (521^3) \rangle \\
+ \langle 4; (62^2) \rangle \\
+ \langle 4; (42^2 1^2) \rangle
\end{array}$$