

SYMMETRIC AND ANTISYMMETRIC OUTER PLETHYSMS
OF SCHUR FUNCTIONS

Ö. EĞECIOĞLU and J. B. REMMEL*

Department of Mathematics
University of California, San Diego
La Jolla, California 92093

Complete tables are given for the calculations of the outer plethysms of S functions for the symmetric and/or antisymmetric cases $\{n\} \otimes \{m\}$, $\{1^n\} \otimes \{m\}$, $\{n\} \otimes \{1^m\}$, and $\{1^n\} \otimes \{1^m\}$ for all values of m and n with $m \cdot n < 30$ as well as for $m = 3$ and $n = 10-14$, $m = 4$ and $n = 8-10$, and $m = 5$ and $n = 6$. © 1985 Academic Press, Inc.

* The second author was partially supported by the NSF under Grant MCS 82-02333

CONTENTS

INTRODUCTION	158
Calculation of Plethysms	158
Use of the Tables	159
EXPLANATION OF TABLES	161
TABLES	
I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$	162
II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$	180

INTRODUCTION

Littlewood's algebra of plethysms for S functions¹⁻³ has proved to be a useful tool in calculations of branching rule coefficients for various subgroups of the full linear group $GL(n)$ and of resolutions of Kronecker products of irreducible representations. Knowledge of such branching rule coefficients and resolutions of Kronecker products has a number of applications in atomic, nuclear, and particle physics. For example, in the 1950s Elliot⁴ exploited the basic identification between plethysms $\{\lambda\} \otimes \{\mu\}$ and branching rule coefficients for the decomposition of $U(N) \supset U(M)$ and Ibrahim's tables⁵ of plethysms to establish the branching rules for the decomposition $U(N) \supset U(3)$ which were used in the study of the $SU(3)$ shell model of nuclei. (See Butler and King⁶ for an explanation of the identification of plethysms $\{\lambda\} \otimes \{\mu\}$ and decomposition of $U(N) \supset U(M)$.) In the late 1960s and early 1970s, several authors used plethysms to attack a number of problems in complex spectra. For example, Smith and Wybourne⁷ gave applications of plethysms to the classification of the atomic states of n -electron configurations, the analysis and classification of the N -particle operators that arise in the application of perturbation theory to atomic problems, and the derivation of selection rules for matrix elements of operators. (See also Judd,⁸ Grama,⁹ Wybourne,¹⁰ Butler and Wybourne,¹¹ and Butler and King.¹²) Work within the last ten years includes Men et al.,¹³⁻¹⁶ who have used and extended the applications of plethysms in nuclear theory and the study of the electron configurations of atoms; Sullivan,^{17,18} who has used plethysms for applications to shell theory; and Dehuai and Wybourne,^{19,20} who have worked on plethysms for spin representations. (See also King and Wybourne,²¹ Newmarch,²² Patera and Sharp,^{23,24} and Sabaliauskas et al.²⁵) A good general reference is Wybourne's book,²⁶ where there are many examples of the uses of the outer plethysm of S functions for calculating branching rule

coefficients for the unitary $U(N)$, orthogonal (O_n), and symplectic (Sp_n) groups and the resolution of Kronecker squares into symmetric and antisymmetric terms and of applications of such calculations to various problems in atomic spectroscopy.

Butler and Wybourne²⁷ published complete tables of the expansions into irreducible components of $\{\lambda\} \otimes \{\mu\}$, where λ is a partition of n , μ is a partition of m , and $m \cdot n \leq 16$. We give tables for the expansions of totally symmetric plethysms $\{n\} \otimes \{m\}$ and the plethysms $\{n\} \otimes \{1^m\}$ for all m and n with $m \cdot n \leq 30$ as well as $m = 3$ and $n = 10-14$, $m = 4$ and $n = 8-10$, and $m = 5$ and $n = 6$. The expansions of $\{1^n\} \otimes \{m\}$ and the totally antisymmetric case $\{1^n\} \otimes \{1^m\}$ can then be read off from our tables by using the conjugacy relations for outer plethysms. We note that plethysms of the form $\{\lambda\} \otimes \{\mu\}$, where $\{\lambda\}$ and $\{\mu\}$ are either totally symmetric or antisymmetric, appear in a number of special cases of the applications listed above (see, for example, Refs. 28, 26, 16, and 11). Also, we should note that in principle, the calculation of the expansion of $\{\lambda\} \otimes \{\mu\}$ for arbitrary partitions λ and μ can be reduced to calculating expansions of totally symmetric plethysms $\{m\} \otimes \{n\}$ although for any large calculation the use of computer programs would be much more efficient than using the tables given here.

Calculation of Plethysms

Let $\lambda = (\lambda_1 \geq \dots \geq \lambda_k > 0)$ be a partition of a natural number n . F_λ will denote the Ferrers diagram of shape λ and $\tilde{\lambda}$ will denote the conjugate of λ . For example, if $\lambda = (3, 2, 2)$,

$$F_\lambda = \begin{array}{|c|c|c|}\hline & \boxed{} & \boxed{} \\ \hline & \boxed{} & \boxed{} \\ \hline & \boxed{} & \boxed{} \\ \hline \end{array}$$

and $\tilde{\lambda} = (3, 3, 2)$ is the partition which results from reading the columns of F_λ . The p -border strip of F_λ is the sequence of p cells of F_λ which start at the rightmost cell in the first row of F_λ and where the next cell in the sequence is either immediately below the previous cell unless there is no cell immediately below the previous cell, in which case the next cell is immediately to the left of the previous cell. For example, the shaded squares represent 3- and 5-border strips of $F_{(3, 2, 2)}$ in the picture



A column-strict tableau T of shape λ is a filling of F_λ with positive integers such that the entries weakly increase from left to right in each row and strictly increase from top to bottom in each column. The weight of T , $\omega(T)$ equals $\prod_{i \in T} x_i$, i.e.,

$$T = \begin{array}{|c|c|c|} \hline 1 & 1 & 2 \\ \hline 2 & 3 & \\ \hline 3 & 4 & \\ \hline \end{array}$$

is a column-strict tableau of shape $(3, 2, 2)$ and $\omega(T) = x_1^2 x_2^2 x_3^2 x_4$. The Schur function associated with λ is defined by $\{\lambda\} = \sum_T \omega(T)$, where the sum runs over all column-strict tableaux T of shape λ . Now if $\{\lambda\} = \{\lambda\}(x_1, \dots, x_N)$ is an S function in the indeterminates x_1, \dots, x_N , then $\{\lambda\}(x')$ will denote the symmetric function which results by replacing each variable x_i in $\{\lambda\}$ by x'_i , e.g., $\{\lambda\}(x') = \{\lambda\}(x'_1, \dots, x'_N)$.

The outer plethysm of S functions $\{\lambda\}$ and $\{\mu\}$ is denoted by $\{\lambda\} \otimes \{\mu\}$ following Littlewood.² Littlewood³ proved

$$\{\lambda\} \otimes \{\mu\} = \sum G_{\lambda, \mu, \nu} \{\nu\}, \quad (1)$$

where $G_{\lambda, \mu, \nu}$ are nonnegative integers and the sum runs only over partitions ν of $m \cdot n$, where λ is a partition of n and μ is a partition of m . Our tables are calculated by using a new algorithm for finding the $G_{\lambda, \mu, \nu}$ values developed by Chen, Garsia, and Remmel.²⁹ Their algorithm reduces the problem of calculating $\{\lambda\} \otimes \{\mu\}$ to the problem of expanding the product of sums of Schur functions as a linear combination of Schur functions, which, in turn, is done by a new fast algorithm for multiplying Schur functions due to Remmel and Whitney.³⁰ An efficient PASCAL program which implements this multiplication algorithm may be found in Ref. 31. This algorithm forms the core of a comprehensive set of routines being developed by Eğecioğlu and Erikson³² for the representation theory of the symmetric group.

The outer plethysm $\{\lambda\} \otimes \{m\}$ is related to the plethysms $\{\lambda\} \otimes \{r\}$, $0 \leq r \leq m - 1$, by the basic

recursion relation

$$\{\lambda\} \otimes \{m\} = \frac{1}{m} \sum_{k=1}^m \{\lambda\}(x^k) (\{\lambda\} \otimes \{m-k\}). \quad (2)$$

In particular, we used the following special case of (2) for calculating the tables of $\{n\} \otimes \{m\}$:

$$\{n\} \otimes \{m\} = \frac{1}{m} \sum_{k=1}^m \{n\}(x^k) (\{n\} \otimes \{m-k\}). \quad (3)$$

Equation (3) is particularly convenient for computational purposes since Chen³³ proved that

$$\{n\}(x') = \sum_{\nu} C_{n, r, \nu} \{\nu\}, \quad (4)$$

where $C_{n, r, \nu} = 0$ unless the Ferrers diagram F_ν can be decomposed by removing in n consecutive stages r -border strips so that at the end of each stage the resulting diagram is a Ferrers diagram of some partition. Moreover, if F_ν can be so decomposed, then $C_{n, r, \nu} = (-1)^l$, where $l = (\text{number of rows of the } n \text{ } r\text{-border strips}) - n$. For example, $C_{2, 2, \{2, 1, 1\}} = 0$ since removing the 2-border strip from $F_{(2, 1, 1)}$ does not leave a Ferrers diagram, i.e.,

$$\begin{array}{|c|c|} \hline \square & \square \\ \hline \end{array} = \begin{array}{|c|} \hline \square \\ \hline \end{array} + \begin{array}{|c|c|} \hline \square & \square \\ \hline \end{array}$$

while $C_{2, 2, \{2, 2\}} = 1$ since

$$\begin{array}{|c|c|} \hline \square & \square \\ \hline \end{array} = \begin{array}{|c|} \hline \square \\ \hline \end{array} + \begin{array}{|c|c|} \hline \square & \square \\ \hline \end{array}$$

and (number of rows of the 2-border strips) - 2 = (2 + 2 - 2) = 2 is even. Thus using this rule, it is easy to see that $\{2\}(x^2) = \{2, 2\} - \{3, 1\} + \{4\}$.

To calculate the tables $\{n\} \otimes \{1^m\}$, we made use of the results of the calculations $\{n\} \otimes \{m\}$ and the recursion relation

$$\{n\} \otimes \{1^m\} = \sum_{k=1}^m (-1)^{k+1} (\{n\} \otimes \{k\}) (\{n\} \otimes \{1^{m-k}\}). \quad (5)$$

Use of the Tables

Our tables give the expansions as a sum of Schur functions first for $\{n\} \otimes \{m\}$ and then for $\{n\} \otimes \{1^m\}$ for all values of m and n with $m \cdot n < 30$ as well as for $m = 3$ and $n = 10-14$, $m = 4$ and $n = 8-10$, and $m = 5$ and $n = 6$. Using the conjugacy relations

$$\begin{aligned} [\{\lambda\} \otimes \{\mu\}]^* &= \{\tilde{\lambda}\} \otimes \{\mu\} && \text{for } n \text{ even} \\ &= \{\tilde{\lambda}\} \otimes \{\tilde{\mu}\} && \text{for } n \text{ odd,} \end{aligned} \quad (6)$$

where λ is a partition of n and $[\{\lambda\} \otimes \{\mu\}]^{\sim} = \sum \times G_{\lambda, \mu, \{\tilde{\nu}\}}$, one can read off the expansions of $\{1^n\} \otimes \{m\}$ and $\{1^n\} \otimes \{1^m\}$ for all of the values m and n above.

Also, we should note that there are three cases of symmetric and antisymmetric plethysms which have nice closed forms [3]:

$$\{n\} \otimes \{2\} = \sum_{\substack{\lambda_1 \geq \lambda_2 \\ \lambda_1, \lambda_2 \text{ even} \\ \lambda_1 + \lambda_2 = 2n}} \{\lambda_1, \lambda_2\} \quad (7)$$

$$\{n\} \otimes \{1^2\} = \sum_{\substack{\lambda_1 \geq \lambda_2 \\ \lambda_1, \lambda_2 \text{ odd} \\ \lambda_1 + \lambda_2 = 2n}} \{\lambda_1, \lambda_2\} \quad (8)$$

$$\{2\} \otimes \{n\} = \sum_{\lambda \text{ has only even parts}} \{\lambda\}. \quad (9)$$

References

1. D. E. Littlewood, J. London Math. Soc. **11**, 49 (1936)
2. D. E. Littlewood, Philos. Trans. R. Soc. London, Ser. A **239**, 305 (1943)
3. D. E. Littlewood, *The Theory of Group Characters*, 2nd ed. (Oxford Univ. Press, New York, 1958)
4. J. P. Elliot, Proc. R. Soc. London, Ser. A **245**, 128 (1958)
5. E. M. Ibrahim, Tables for Plethysms of S -functions (Royal Society, London, Depository of Unpublished Tables)
6. P. H. Butler and R. C. King, J. Math. Phys. **14**, 741 (1973)
7. P. R. Smith and B. G. Wybourne, J. Math. Phys. **9**, 1040 (1968)
8. B. R. Judd, Comments At. Mol. Phys. (GB) **1**, 57 (1969)
9. N. Gramma, Lett. Nuovo Cimento **4**, 39 (1970)
10. B. G. Wybourne, J. Phys. (France) **30**, 39 (1969)
11. P. H. Butler and B. G. Wybourne, J. Phys. (France) **30**, 795 (1969)
12. P. H. Butler and R. C. King, J. Math. Phys. **14**, 1176 (1973)
13. B. A. Men, V. L. Cherepanov, and A. N. Men, Int. J. Quantum Chem. **7**, 739 (1973)
14. B. A. Men and A. N. Men, Dokl. Akad. Nauk. SSSR **220**, 322 (1975); transl., Sov. Phys. Dokl. **20**, 45 (1975)
15. B. A. Men, P. T. Varshavsky, and A. N. Men, Int. J. Quantum Chem. **9**, 657 (1975)
16. B. A. Men, M. L. Leschinsky, and A. N. Men, Int. J. Quantum Chem. **9**, 669 (1975)
17. J. J. Sullivan, J. Math. Phys. **19**, 1674 (1978)
18. J. J. Sullivan, J. Math. Phys. **19**, 1681 (1978)
19. L. Dehuai and B. G. Wybourne, J. Phys. A **14**, 327 (1981)
20. L. Dehuai and B. G. Wybourne, J. Phys. A **14**, 1835 (1981)
21. R. C. King and B. G. Wybourne, J. Phys. A **15**, 1137 (1982)
22. J. D. Newmarch, J. Math. Phys. **24**, 757 (1983)
23. J. Patera and R. T. Sharp, J. Math. Phys. **22**, 261 (1981)
24. J. Patera and R. T. Sharp, J. Phys. A **13**, 397 (1980)
25. L. J. Sabaliauskas, A. Jucys, and A. P. Bernotas, Litovsk. Fiz. Sb **20**, 3 (1980); transl., Sov. Phys. Collect. **20**, 1 (1980)
26. B. G. Wybourne, *Symmetry Principles and Atomic Spectroscopy*, with an appendix of tables by P. H. Butler, (Wiley, New York, 1970)
27. P. H. Butler and B. G. Wybourne, ATOMIC DATA **3**, 133 (1971)
28. B. G. Wybourne, J. Math. Phys. **10**, 467 (1969)
29. Y. M. Chen, A. M. Garsia, and J. B. Remmel, Contemporary Math., in press.
30. J. B. Remmel and R. Whitney, J. Algorithms, in press.
31. Ömer Eğecioğlu, Comput. Phys. Commun. **28**, 183 (1982)
32. Ömer Eğecioğlu and G. M. Erikson, in preparation.
33. Y. M. Chen, Ph.D. thesis, University of California, San Diego, 1982.

EXPLANATION OF TABLES

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$ **TABLE II.** Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$

See Eq. (1). The expansions are given for all values of m and n with $m \cdot n < 30$ as well as for $m = 3$ and $n = 10-14$, $m = 4$ and $n = 8-10$, and $m = 5$ and $n = 6$. Plethysms are listed first in order of increasing n , then m . To save space no commas are written between the parts of the partitions in the expansion. However, the parts are always arranged in decreasing order, so that there is no confusion on how the partitions should be read, e.g., in the expansion of $\{4\} \otimes \{4\}$, $\{6\ 4^2\ 2\} = \{6,4,4,2\}$.

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$
See page 161 for Explanation of Tables

 $\{n\} \otimes \{2\}$

$$\begin{aligned}\{2\} \otimes \{2\} &= \{2^2\} + \{4\}. \\ \{3\} \otimes \{2\} &= \{42\} + \{6\}. \\ \{4\} \otimes \{2\} &= \{4^2\} + \{62\} + \{8\}. \\ \{5\} \otimes \{2\} &= \{64\} + \{82\} + \{10\}. \\ \{6\} \otimes \{2\} &= \{6^2\} + \{84\} + \{102\} + \{12\}. \\ \{7\} \otimes \{2\} &= \{86\} + \{104\} + \{122\} + \{14\}. \\ \{8\} \otimes \{2\} &= \{8^2\} + \{106\} + \{124\} + \{142\} + \{16\}. \\ \{9\} \otimes \{2\} &= \{108\} + \{126\} + \{144\} + \{162\} + \{18\}. \\ \{10\} \otimes \{2\} &= \{10^2\} + \{128\} + \{146\} + \{164\} + \{182\} + \{20\}. \\ \{11\} \otimes \{2\} &= \{1210\} + \{148\} + \{166\} + \{184\} + \{202\} + \{22\}. \\ \{12\} \otimes \{2\} &= \{12^2\} + \{1410\} + \{168\} + \{186\} + \{204\} + \{222\} + \{24\}. \\ \{13\} \otimes \{2\} &= \{1412\} + \{1610\} + \{188\} + \{206\} + \{224\} + \{242\} + \{26\}. \\ \{14\} \otimes \{2\} &= \{14^2\} + \{1612\} + \{1810\} + \{208\} + \{226\} + \{244\} + \{262\} + \{28\}.\end{aligned}$$

 $\{n\} \otimes \{3\}$

$$\begin{aligned}\{2\} \otimes \{3\} &= \{2^3\} + \{42\} + \{6\}. \\ \{3\} \otimes \{3\} &= \{4^21\} + \{52^2\} + \{63\} + \{72\} + \{9\}. \\ \{4\} \otimes \{3\} &= \{4^3\} + \{642\} + \{6^2\} + \{741\} + \{82^2\} + \{84\} + \{93\} + \{102\} + \{12\}. \\ \{5\} \otimes \{3\} &= \{6^23\} + \{74^2\} + \{852\} + \{861\} + \{942\} + \{96\} + \{1041\} + \{105\} + \{112^2\} + \{114\} + \\ &\quad \{123\} + \{132\} + \{15\}. \\ \{6\} \otimes \{3\} &= \{6^3\} + \{864\} + \{8^22\} + \{963\} + \{104^2\} + \{1062\} + \{1071\} + \{108\} + \{1152\} + \\ &\quad \{1161\} + \{1242\} + 2\{126\} + \{1341\} + \{135\} + \{142^2\} + \{144\} + \{153\} + \{162\} + \\ &\quad \{18\}. \\ \{7\} \otimes \{3\} &= \{8^25\} + \{96^2\} + \{1074\} + \{1083\} + \{10^21\} + \{1164\} + \{1182\} + \{1263\} + \{1272\} + \\ &\quad \{1281\} + \{129\} + \{134^2\} + \{1362\} + \{1371\} + \{138\} + \{1452\} + \{1461\} + \{147\} + \\ &\quad \{1542\} + 2\{156\} + \{1641\} + \{165\} + \{172^2\} + \{174\} + \{183\} + \{192\} + \{21\}. \\ \{8\} \otimes \{3\} &= \{8^3\} + \{1086\} + \{10^24\} + \{1185\} + \{126^2\} + \{1284\} + \{1293\} + \{12102\} + \{12^2\} + \\ &\quad \{1374\} + \{1383\} + \{13101\} + \{1464\} + 2\{1482\} + \{1491\} + \{1410\} + \{1563\} + \\ &\quad \{1572\} + \{1581\} + \{159\} + \{164^2\} + \{1662\} + \{1671\} + 2\{168\} + \{1752\} + \{1761\} + \\ &\quad \{177\} + \{1842\} + 2\{186\} + \{1941\} + \{195\} + \{202^2\} + \{204\} + \{213\} + \{222\} + \\ &\quad \{24\}. \\ \{9\} \otimes \{3\} &= \{10^27\} + \{118^2\} + \{1296\} + \{12105\} + \{12^23\} + \{1386\} + \{13104\} + \{1485\} + \\ &\quad \{1494\} + \{14103\} + \{14112\} + \{14121\} + \{156^2\} + \{1584\} + \{1593\} + \{15102\} + \\ &\quad \{1512\} + \{1674\} + \{1683\} + \{1692\} + 2\{16101\} + \{1611\} + \{1764\} + 2\{1782\} + \\ &\quad \{1791\} + \{1710\} + \{1863\} + \{1872\} + \{1881\} + 2\{189\} + \{194^2\} + \{1962\} + \\ &\quad \{1971\} + 2\{198\} + \{2052\} + \{2061\} + \{207\} + \{2142\} + 2\{216\} + \{2241\} + \{225\} + \\ &\quad \{232^2\} + \{234\} + \{243\} + \{252\} + \{27\}. \\ \{10\} \otimes \{3\} &= \{10^3\} + \{12108\} + \{12^26\} + \{13107\} + \{148^2\} + \{14106\} + \{14115\} + \{14124\} + \\ &\quad \{142^2\} + \{1596\} + \{15105\} + \{15123\} + \{1686\} + 2\{16104\} + \{16113\} + \{16122\} + \\ &\quad \{16131\} + \{1614\} + \{1785\} + \{1794\} + \{17103\} + \{17112\} + \{17121\} + \{186^2\} +\end{aligned}$$

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$

See page 161 for Explanation of Tables

$$\begin{aligned}
& \{1884\} + \{1893\} + 2\{18102\} + \{18111\} + 2\{1812\} + \{1974\} + \{1983\} + \{1992\} + \\
& 2\{19101\} + \{1911\} + \{2064\} + 2\{2082\} + \{2091\} + 2\{2010\} + \{2163\} + \{2172\} + \\
& \{2181\} + 2\{219\} + \{224^2\} + \{2262\} + \{2271\} + 2\{228\} + \{2352\} + \{2361\} + \{237\} + \\
& \{2442\} + 2\{246\} + \{2541\} + \{255\} + \{262^2\} + \{264\} + \{273\} + \{282\} + \{30\}. \\
\{11\} \otimes \{3\} = & \{12^29\} + \{1310^2\} + \{14118\} + \{14127\} + \{14^25\} + \{15108\} + \{15126\} + \{16107\} + \\
& \{16116\} + \{16125\} + \{16134\} + \{16143\} + \{16^21\} + \{178^2\} + \{17106\} + \{17115\} + \\
& \{17124\} + \{17142\} + \{1896\} + \{18105\} + \{18114\} + 2\{18123\} + \{18132\} + \\
& \{18141\} + \{1815\} + \{1986\} + 2\{19104\} + \{19113\} + \{19122\} + \{19131\} + \{1914\} + \\
& \{2085\} + \{2094\} + \{20103\} + 2\{20112\} + 2\{20121\} + \{2013\} + \{216^2\} + \{2184\} + \\
& \{2193\} + 2\{21102\} + \{21111\} + 2\{2112\} + \{2274\} + \{2283\} + \{2292\} + 2\{22101\} + \\
& 2\{2211\} + \{2364\} + 2\{2382\} + \{2391\} + 2\{2310\} + \{2463\} + \{2472\} + \{2481\} + \\
& 2\{249\} + \{254^2\} + \{2562\} + \{2571\} + 2\{258\} + \{2652\} + \{2661\} + \{267\} + \{2742\} + \\
& 2\{276\} + \{2841\} + \{285\} + \{292^2\} + \{294\} + \{303\} + \{312\} + \{33\}. \\
\{12\} \otimes \{3\} = & \{12^3\} + \{141210\} + \{14^28\} + \{15129\} + \{1610^2\} + \{16128\} + \{16137\} + \{16146\} + \\
& \{16^24\} + \{17118\} + \{17127\} + \{17145\} + \{18108\} + 2\{18126\} + \{18135\} + \{18144\} + \\
& \{18153\} + \{18162\} + \{18^2\} + \{19107\} + \{19116\} + \{19125\} + \{19134\} + \{19143\} + \\
& \{19161\} + \{208^2\} + \{20106\} + \{20115\} + 2\{20124\} + \{20133\} + 2\{20142\} + \\
& \{20151\} + \{2016\} + \{2196\} + \{21105\} + \{21114\} + 2\{21123\} + \{21132\} + \{21141\} + \\
& \{2115\} + \{2286\} + 2\{22104\} + \{22113\} + 2\{22122\} + 2\{22131\} + 2\{2214\} + \\
& \{2385\} + \{2394\} + \{23103\} + 2\{23112\} + 2\{23121\} + \{2313\} + \{246^2\} + \{2484\} + \\
& \{2493\} + 2\{24102\} + \{24111\} + 3\{2412\} + \{2574\} + \{2583\} + \{2592\} + 2\{25101\} + \\
& 2\{2511\} + \{2664\} + 2\{2682\} + \{2691\} + 2\{2610\} + \{2763\} + \{2772\} + \{2781\} + \\
& 2\{279\} + \{284^2\} + \{2862\} + \{2871\} + 2\{288\} + \{2952\} + \{2961\} + \{297\} + \{3042\} + \\
& 2\{306\} + \{3141\} + \{315\} + \{322^2\} + \{324\} + \{333\} + \{342\} + \{36\}. \\
\{13\} \otimes \{3\} = & \{14^211\} + \{1512^2\} + \{161310\} + \{16149\} + \{16^27\} + \{171210\} + \{17148\} + \{18129\} + \\
& \{18138\} + \{18147\} + \{18156\} + \{18165\} + \{18^23\} + \{1910^2\} + \{19128\} + \{19137\} + \\
& \{19146\} + \{19164\} + \{20118\} + \{20127\} + \{20136\} + 2\{20145\} + \{20154\} + \\
& \{20163\} + \{20172\} + \{20181\} + \{21108\} + 2\{21126\} + \{21135\} + \{21144\} + \\
& \{21153\} + \{21162\} + \{2118\} + \{22107\} + \{22116\} + \{22125\} + 2\{22134\} + \\
& 2\{22143\} + \{22152\} + 2\{22161\} + \{2217\} + \{238^2\} + \{23106\} + \{23115\} + \\
& 2\{23124\} + \{23133\} + 2\{23142\} + \{23151\} + \{2316\} + \{2496\} + \{24105\} + \\
& \{24114\} + 2\{24123\} + 2\{24132\} + 2\{24141\} + 2\{2415\} + \{2586\} + 2\{25104\} + \\
& \{25113\} + 2\{25122\} + 2\{25131\} + 2\{2514\} + \{2685\} + \{2694\} + \{26103\} + \\
& 2\{26112\} + 2\{26121\} + 2\{2613\} + \{276^2\} + \{2784\} + \{2793\} + 2\{27102\} + \\
& \{27111\} + 3\{2712\} + \{2874\} + \{2883\} + \{2892\} + 2\{28101\} + 2\{2811\} + \{2964\} + \\
& 2\{2982\} + \{2991\} + 2\{2910\} + \{3063\} + \{3072\} + \{3081\} + 2\{309\} + \{314^2\} + \\
& \{3162\} + \{3171\} + 2\{318\} + \{3252\} + \{3261\} + \{327\} + \{3342\} + 2\{336\} + \\
& \{3441\} + \{345\} + \{352^2\} + \{354\} + \{363\} + \{372\} + \{39\}. \\
\{14\} \otimes \{3\} = & \{14^3\} + \{161412\} + \{16^210\} + \{171411\} + \{1812^2\} + \{181410\} + \{18159\} + \{18168\} + \\
& \{18^26\} + \{191310\} + \{19149\} + \{19167\} + \{201210\} + 2\{20148\} + \{20157\} + \\
& \{20166\} + \{20175\} + \{20184\} + \{20^22\} + \{21129\} + \{21138\} + \{21147\} + \{21156\} + \\
& \{21165\} + \{21183\} + \{2210^2\} + \{22128\} + \{22137\} + 2\{22146\} + \{22155\} + \\
& 2\{22164\} + \{22173\} + \{22182\} + \{22191\} + \{2220\} + \{23118\} + \{23127\} + \{23136\} + \\
& 2\{23145\} + \{23154\} + \{23163\} + \{23172\} + \{23181\} + \{24108\} + 2\{24126\} + \\
& \{24135\} + 2\{24144\} + 2\{24153\} + 2\{24162\} + \{24171\} + 2\{2418\} + \{25107\} + \\
& \{25116\} + \{25125\} + 2\{25134\} + 2\{25143\} + \{25152\} + 2\{25161\} + \{2517\} + \\
& \{268^2\} + \{26106\} + \{26115\} + 2\{26124\} + \{26133\} + 3\{26142\} + 2\{26151\} + \\
& 2\{2616\} + \{2796\} + \{27105\} + \{27114\} + 2\{27123\} + 2\{27132\} + 2\{27141\} + \\
& 2\{2715\} + \{2886\} + 2\{28104\} + \{28113\} + 2\{28122\} + 2\{28131\} + 3\{2814\} + \\
& \{2985\} + \{2994\} + \{29103\} + 2\{29112\} + 2\{29121\} + 2\{2913\} + \{306^2\} + \{3084\} + \\
& \{3093\} + 2\{30102\} + \{30111\} + 3\{3012\} + \{3174\} + \{3183\} + \{3192\} + 2\{31101\} + \\
& 2\{3111\} + \{3264\} + 2\{3282\} + \{3291\} + 2\{3210\} + \{3363\} + \{3372\} + \{3381\} +
\end{aligned}$$

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$
See page 161 for Explanation of Tables

$$2\{339\} + \{344^2\} + \{3462\} + \{3471\} + 2\{348\} + \{3552\} + \{3561\} + \{357\} + \{3642\} + \\ 2\{366\} + \{3741\} + \{375\} + \{382^2\} + \{384\} + \{393\} + \{402\} + \{42\}.$$

$\{n\} \otimes \{4\}$

$$\{2\} \otimes \{4\} = \{2^4\} + \{42^2\} + \{4^2\} + \{62\} + \{8\}.$$

$$\{3\} \otimes \{4\} = \{4^3\} + \{5421\} + \{62^3\} + \{642\} + \{6^2\} + \{732\} + \{741\} + \{82^2\} + \{84\} + \{93\} + \\ \{102\} + \{12\}.$$

$$\{4\} \otimes \{4\} = \{4^4\} + \{64^22\} + \{6^22^2\} + \{6^24\} + \{74^21\} + \{7531\} + \{763\} + \{7^21^2\} + \{842^2\} + \\ 2\{84^2\} + \{8521\} + 2\{862\} + \{8^2\} + \{9421\} + \{943\} + \{952\} + \{961\} + \{102^3\} + \\ 2\{1042\} + \{1051\} + 2\{106\} + \{1132\} + \{1141\} + \{122^2\} + 2\{124\} + \{133\} + \{142\} + \\ \{16\}.$$

$$\{5\} \otimes \{4\} = \{6^32\} + \{7643\} + \{84^3\} + \{8642\} + \{8651\} + \{86^2\} + \{8741\} + \{8^22^2\} + \{8^24\} + \\ \{9542\} + \{9632\} + \{9641\} + \{965\} + \{9731\} + \{974\} + \{9821\} + \{983\} + \\ \{104^22\} + \{10541\} + \{1062^2\} + \{10631\} + 3\{1064\} + \{10721\} + \{1073\} + 2\{1082\} + \\ \{1091\} + \{10^2\} + \{114^21\} + \{1152^2\} + \{11531\} + \{1154\} + \{11621\} + 2\{1163\} + \\ \{1171^2\} + 2\{1172\} + \{1181\} + \{1242^2\} + 2\{124^2\} + \{12521\} + \{1253\} + 3\{1262\} + \\ \{1271\} + 2\{128\} + \{13421\} + \{1343\} + 2\{1352\} + 2\{1361\} + \{137\} + \{142^3\} + \\ 2\{1442\} + \{1451\} + 2\{146\} + \{1532\} + \{1541\} + \{155\} + \{162^2\} + 2\{164\} + \{173\} + \\ \{182\} + \{20\}.$$

$$\{6\} \otimes \{4\} = \{6^4\} + \{86^24\} + \{8^24^2\} + \{8^262\} + \{8^3\} + \{96^23\} + \{9753\} + \{9852\} + \{9861\} + \\ \{9^23^2\} + \{1064^2\} + 2\{106^22\} + \{10743\} + \{10761\} + 2\{10842\} + \{10851\} + \\ 2\{1086\} + \{10941\} + \{1095\} + \{10^22^2\} + 2\{10^24\} + \{11643\} + \{11652\} + \{116^21\} + \\ \{11742\} + 2\{11751\} + \{1176\} + \{11832\} + 2\{11841\} + 2\{1185\} + 2\{11931\} + \\ \{1194\} + \{111021\} + \{11103\} + \{11^21^2\} + \{124^3\} + 2\{12642\} + \{12651\} + 3\{126^2\} + \\ \{12732\} + 2\{12741\} + \{1275\} + 2\{1282^2\} + \{12831\} + 4\{1284\} + \{12921\} + \\ 2\{1293\} + 3\{12102\} + 2\{12^2\} + \{13542\} + \{13632\} + 2\{13641\} + 2\{1365\} + \\ 2\{13731\} + 3\{1374\} + 2\{13821\} + 3\{1383\} + \{1391^2\} + 2\{1392\} + 2\{13101\} + \\ \{144^22\} + \{14541\} + 2\{1462^2\} + \{14631\} + 4\{1464\} + 2\{14721\} + 2\{1473\} + \\ 4\{1482\} + 2\{1491\} + 2\{1410\} + \{154^21\} + \{1552^2\} + \{15531\} + \{1554\} + \{15621\} + \\ 3\{1563\} + \{1571^2\} + 3\{1572\} + 2\{1581\} + \{159\} + \{1642^2\} + 2\{164^2\} + \{16521\} + \\ \{1653\} + 4\{1662\} + 2\{1671\} + 3\{168\} + \{17421\} + \{1743\} + 2\{1752\} + 2\{1761\} + \\ \{177\} + \{182^3\} + 2\{1842\} + \{1851\} + 3\{186\} + \{1932\} + \{1941\} + \{195\} + \{202^2\} + \\ 2\{204\} + \{213\} + \{222\} + \{24\}.$$

$$\{7\} \otimes \{4\} = \{8^34\} + \{9865\} + \{106^3\} + \{10864\} + \{10873\} + \{108^22\} + \{10963\} + \{10^24^2\} + \\ \{10^262\} + \{10^271\} + \{10^28\} + \{11764\} + \{11854\} + \{11863\} + \{11872\} + \{118^21\} + \\ \{11953\} + \{11962\} + \{11971\} + \{111043\} + \{111052\} + \{111061\} + \{11107\} + \\ \{11^251\} + \{126^24\} + \{12763\} + \{1284^2\} + \{12853\} + 3\{12862\} + \{12871\} + \\ 2\{128^2\} + \{12943\} + \{12952\} + 2\{12961\} + \{1297\} + 2\{121042\} + 2\{121051\} + \\ 3\{12106\} + \{121132\} + \{121141\} + \{12115\} + \{12^22^2\} + 2\{12^24\} + \{136^23\} + \\ \{1374^2\} + \{13753\} + \{13762\} + \{137^21\} + \{13843\} + 2\{13852\} + 3\{13861\} + \\ 2\{1387\} + \{1393^2\} + 2\{13942\} + 2\{13951\} + 3\{1396\} + \{131032\} + 3\{131041\} + \\ 3\{13105\} + 2\{131131\} + 2\{13114\} + \{131221\} + 2\{13123\} + \{13^21^2\} + \{1464^2\} + \\ 2\{146^22\} + \{14743\} + \{14752\} + 2\{14761\} + 3\{14842\} + 3\{14851\} + 4\{1486\} + \\ \{14932\} + 3\{14941\} + 3\{1495\} + 2\{14102^2\} + 2\{141031\} + 5\{14104\} + 2\{141121\} + \\ 2\{14113\} + 3\{14122\} + \{14131\} + \{14^2\} + \{15643\} + \{15652\} + \{156^21\} + \\ 2\{15742\} + 2\{15751\} + 3\{1576\} + 2\{15832\} + 3\{15841\} + 4\{1585\} + \{1592^2\} + \\ 3\{15931\} + 4\{1594\} + 2\{151021\} + 4\{15103\} + \{15111^2\} + 3\{15112\} + 2\{15121\} + \\ \{164^3\} + 2\{16642\} + \{16651\} + 3\{166^2\} + \{16732\} + 3\{16741\} + 2\{1675\} + \\ 2\{1682^2\} + 2\{16831\} + 6\{1684\} + 2\{16921\} + 4\{1693\} + \{16101^2\} + 5\{16102\} + \\ 2\{16111\} + 3\{1612\} + \{17542\} + \{17632\} + 2\{17641\} + 2\{1765\} + \{1772^2\} +$$

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$
See page 161 for Explanation of Tables

$$\begin{aligned}
& 2\{17731\} + 4\{1774\} + 3\{17821\} + 4\{1783\} + \{1791^2\} + 4\{1792\} + 3\{17101\} + \\
& \{1711\} + \{184^22\} + \{18541\} + 2\{1862^2\} + \{18631\} + 4\{1864\} + 2\{18721\} + \\
& 3\{1873\} + 5\{1882\} + 3\{1891\} + 3\{1810\} + \{194^21\} + \{1952^2\} + \{19531\} + \{1954\} + \\
& \{19621\} + 3\{1963\} + \{1971^2\} + 4\{1972\} + 3\{1981\} + 2\{199\} + \{2042^2\} + 2\{204^2\} + \\
& \{20521\} + \{2053\} + 4\{2062\} + 2\{2071\} + 3\{208\} + \{21421\} + \{2143\} + 2\{2152\} + \\
& 2\{2161\} + 2\{217\} + \{222^3\} + 2\{2242\} + \{2251\} + 3\{226\} + \{2332\} + \{2341\} + \\
& \{235\} + \{242^2\} + 2\{244\} + \{253\} + \{262\} + \{28\}. \\
\{8\} \otimes \{4\} = & \{8^4\} + \{108^26\} + \{10^26^2\} + \{10^284\} + \{10^32\} + \{118^25\} + \{11975\} + \{111074\} + \\
& \{111083\} + \{112^25^2\} + \{1286^2\} + 2\{128^24\} + \{12965\} + \{12983\} + 2\{121064\} + \\
& \{121073\} + 2\{121082\} + \{121091\} + \{1210^2\} + \{121163\} + \{121172\} + \{121181\} + \\
& \{12^24^2\} + 2\{12^262\} + 2\{12^28\} + \{13865\} + \{13874\} + \{138^23\} + \{13964\} + \\
& 2\{13973\} + \{13982\} + \{131054\} + 2\{131063\} + 2\{131072\} + 2\{131081\} + \\
& \{13109\} + 2\{131153\} + \{131162\} + 2\{131171\} + \{13118\} + \{131243\} + \{131252\} + \\
& 2\{131261\} + 2\{13127\} + \{13^23^2\} + \{13^251\} + \{146^3\} + 2\{14864\} + \{14873\} + \\
& 3\{148^22\} + \{14954\} + 2\{14963\} + \{14972\} + 2\{14981\} + 2\{14104^2\} + \{141053\} + \\
& 4\{141062\} + 3\{141071\} + 4\{14108\} + \{141143\} + 2\{141152\} + 3\{141161\} + \\
& 2\{14117\} + 3\{141242\} + 2\{141251\} + 4\{14126\} + 2\{141341\} + 2\{14135\} + \\
& 2\{14^22^2\} + 2\{14^24\} + \{15764\} + \{15854\} + 2\{15863\} + 2\{15872\} + 2\{158^21\} + \\
& 2\{15953\} + 3\{15962\} + 3\{15971\} + 2\{1598\} + 2\{151043\} + 3\{151052\} + \\
& 4\{151061\} + 4\{15107\} + \{15113^2\} + 2\{151142\} + 4\{151151\} + 4\{15116\} + \\
& 2\{151232\} + 3\{151241\} + 4\{15125\} + 3\{151331\} + 2\{15134\} + \{151421\} + \\
& 2\{15143\} + \{15^21^2\} + \{166^24\} + \{16763\} + 2\{1684^2\} + \{16853\} + 4\{16862\} + \\
& 2\{16871\} + 4\{168^2\} + 2\{16943\} + 2\{16952\} + 4\{16961\} + 3\{1697\} + 4\{161042\} + \\
& 4\{161051\} + 7\{16106\} + 2\{161132\} + 4\{161141\} + 4\{16115\} + 2\{16122^2\} + \\
& 2\{161231\} + 7\{16124\} + 2\{161321\} + 3\{16133\} + 4\{16142\} + \{16151\} + 2\{16^2\} + \\
& \{176^23\} + \{1774^2\} + \{17753\} + \{17762\} + \{177^21\} + \{17843\} + 3\{17852\} + \\
& 4\{17861\} + 3\{1787\} + \{1793^2\} + 3\{17942\} + 4\{17951\} + 5\{1796\} + 2\{171032\} + \\
& 5\{171041\} + 6\{17105\} + \{17112^2\} + 4\{171131\} + 5\{17114\} + 3\{171221\} + \\
& 5\{17123\} + 2\{17131^2\} + 3\{17132\} + 2\{17141\} + \{1864^2\} + 2\{186^22\} + \{18743\} + \\
& \{18752\} + 2\{18761\} + 4\{18842\} + 3\{18851\} + 6\{1886\} + 2\{18932\} + 4\{18941\} + \\
& 5\{1895\} + 3\{18102^2\} + 3\{181031\} + 8\{18104\} + 3\{181121\} + 5\{18113\} + \\
& 6\{18122\} + 3\{18131\} + 3\{1814\} + \{19643\} + \{19652\} + \{196^21\} + 2\{19742\} + \\
& 2\{19751\} + 3\{1976\} + 2\{19832\} + 4\{19841\} + 5\{1985\} + \{1992^2\} + 4\{19931\} + \\
& 6\{1994\} + 3\{191021\} + 6\{19103\} + 2\{19111^2\} + 5\{19112\} + 4\{19121\} + \{1913\} + \\
& \{204^3\} + 2\{20642\} + \{20651\} + 3\{206^2\} + \{20732\} + 3\{20741\} + 2\{2075\} + \\
& 3\{2082^2\} + 2\{20831\} + 7\{2084\} + 3\{20921\} + 5\{2093\} + \{20101^2\} + 7\{20102\} + \\
& 3\{20111\} + 4\{2012\} + \{21542\} + \{21632\} + 2\{21641\} + 2\{2165\} + \{2172^2\} + \\
& 2\{21731\} + 4\{2174\} + 3\{21821\} + 5\{2183\} + \{2191^2\} + 5\{2192\} + 4\{21101\} + \\
& 2\{2111\} + \{224^22\} + \{22541\} + 2\{2262^2\} + \{22631\} + 4\{2264\} + 2\{22721\} + \\
& 3\{2273\} + 6\{2282\} + 4\{2291\} + 4\{2210\} + \{234^21\} + \{2352^2\} + \{23531\} + \{2354\} + \\
& \{23621\} + 3\{2363\} + \{2371^2\} + 4\{2372\} + 3\{2381\} + 2\{239\} + \{2442^2\} + 2\{244^2\} + \\
& \{24521\} + \{2453\} + 4\{2462\} + 2\{2471\} + 4\{248\} + \{25421\} + \{2543\} + 2\{2552\} + \\
& 2\{2561\} + 2\{257\} + \{262^3\} + 2\{2642\} + \{2651\} + 3\{266\} + \{2732\} + \{2741\} + \\
& \{275\} + \{282^2\} + 2\{284\} + \{293\} + \{302\} + \{32\}. \\
\{9\} \otimes \{4\} = & \{10^36\} + \{111087\} + \{128^3\} + \{121086\} + \{121095\} + \{1210^24\} + \{121185\} + \\
& \{12^26^2\} + \{12^284\} + \{12^293\} + \{12^2102\} + \{12^3\} + \{13986\} + \{131076\} + \{131085\} + \\
& \{131094\} + \{1310^23\} + \{131175\} + \{131184\} + \{131193\} + \{131265\} + \{131274\} + \\
& \{131283\} + \{131292\} + \{1312101\} + \{13^273\} + \{148^26\} + \{14985\} + \{14106^2\} + \\
& \{141075\} + 3\{141084\} + \{141093\} + 2\{1410^22\} + \{141165\} + \{141174\} + \\
& 2\{141183\} + \{141192\} + \{1411101\} + 2\{141264\} + 2\{141273\} + 3\{141282\} + \\
& 2\{141291\} + 2\{141210\} + \{141354\} + \{141363\} + \{141372\} + 2\{141381\} + \\
& \{14139\} + \{14^24^2\} + 2\{14^262\} + \{14^271\} + 2\{14^28\} + \{158^25\} + \{1596^2\} + \{15975\} + \\
& \{15984\} + \{159^23\} + \{151065\} + 2\{151074\} + 3\{151083\} + 2\{151092\} + \{1510^21\} +
\end{aligned}$$

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$

See page 161 for Explanation of Tables

$$\begin{aligned}
& \{15115^2\} + 2\{151164\} + 2\{151173\} + 3\{151182\} + 2\{151191\} + \{151110\} + \\
& \{151254\} + 3\{151263\} + 3\{151272\} + 3\{151281\} + 3\{15129\} + 2\{151353\} + \\
& 2\{151362\} + 3\{151371\} + 2\{15138\} + \{151443\} + 2\{151452\} + 2\{151461\} + \\
& 2\{15147\} + \{15^23^2\} + \{15^251\} + \{15^26\} + \{1686^2\} + 2\{168^24\} + \{16965\} + \{16974\} + \\
& 2\{16983\} + 3\{161064\} + 3\{161073\} + 4\{161082\} + 3\{161091\} + 3\{1610^2\} + \\
& \{161154\} + 3\{161163\} + 3\{161172\} + 4\{161181\} + 2\{16119\} + 2\{16124^2\} + \\
& 2\{161253\} + 5\{161262\} + 4\{161271\} + 6\{16128\} + 2\{161343\} + 2\{161352\} + \\
& 4\{161361\} + 4\{16137\} + 3\{161442\} + 3\{161451\} + 5\{16146\} + \{161532\} + \\
& 2\{161541\} + 2\{16155\} + \{16^22^2\} + 3\{16^24\} + \{17865\} + \{17874\} + \{178^23\} + \\
& 2\{17964\} + 2\{17973\} + 3\{17982\} + \{179^21\} + 2\{171054\} + 3\{171063\} + \\
& 4\{171072\} + 5\{171081\} + 3\{17109\} + \{17114^2\} + 3\{171153\} + 4\{171162\} + \\
& 5\{171171\} + 5\{17118\} + 2\{171243\} + 4\{171252\} + 6\{171261\} + 6\{17127\} + \\
& \{17133^2\} + 3\{171342\} + 5\{171351\} + 5\{17136\} + 2\{171432\} + 4\{171441\} + \\
& 5\{17145\} + 3\{171531\} + 3\{17154\} + 2\{171621\} + 2\{17163\} + \{17^21^2\} + \{186^3\} + \\
& 2\{18864\} + \{18873\} + 3\{188^22\} + \{18954\} + 3\{18963\} + 2\{18972\} + 3\{18981\} + \\
& \{189^2\} + 2\{18104^2\} + 2\{181053\} + 6\{181062\} + 5\{181071\} + 7\{18108\} + \\
& 2\{181143\} + 4\{181152\} + 6\{181161\} + 5\{18117\} + \{18123^2\} + 5\{181242\} + \\
& 5\{181251\} + 9\{18126\} + 2\{181332\} + 5\{181341\} + 6\{18135\} + 3\{18142^2\} + \\
& 3\{181431\} + 7\{18144\} + 2\{181521\} + 4\{18153\} + 4\{18162\} + \{18171\} + 2\{18^2\} + \\
& \{19764\} + \{19854\} + 2\{19863\} + 2\{19872\} + \{198^21\} + \{1994^2\} + 2\{19953\} + \\
& 4\{19962\} + 4\{19971\} + 4\{1998\} + 3\{191043\} + 4\{191052\} + 6\{191061\} + \\
& 7\{19107\} + \{19113^2\} + 4\{191142\} + 6\{191151\} + 8\{19116\} + 3\{191232\} + \\
& 6\{191241\} + 8\{19125\} + \{19132^2\} + 5\{191331\} + 7\{19134\} + 3\{191421\} + \\
& 6\{19143\} + 2\{19151^2\} + 4\{19152\} + 3\{19161\} + \{206^24\} + \{20763\} + 2\{2084^2\} + \\
& \{20853\} + 4\{20862\} + 2\{20871\} + 4\{208^2\} + 2\{20943\} + 3\{20952\} + 5\{20961\} + \\
& 4\{2097\} + 5\{201042\} + 6\{201051\} + 9\{20106\} + 3\{201132\} + 6\{201141\} + \\
& 7\{20115\} + 3\{20122^2\} + 4\{201231\} + 10\{20124\} + 4\{201321\} + 6\{20133\} + \\
& \{20141^2\} + 7\{20142\} + 3\{20151\} + 3\{2016\} + \{216^23\} + \{2174^2\} + \{21753\} + \\
& \{21762\} + \{217^21\} + \{21843\} + 3\{21852\} + 4\{21861\} + 3\{2187\} + \{2193^2\} + \\
& 4\{21942\} + 4\{21951\} + 7\{2196\} + 3\{211032\} + 6\{211041\} + 8\{21105\} + \\
& 2\{21112^2\} + 5\{211131\} + 8\{21114\} + 4\{211221\} + 8\{21123\} + 2\{21131^2\} + \\
& 6\{21132\} + 4\{21141\} + 2\{2115\} + \{2264^2\} + 2\{226^22\} + \{22743\} + \{22752\} + \\
& 2\{22761\} + 4\{22842\} + 3\{22851\} + 6\{2286\} + 2\{22932\} + 5\{22941\} + 6\{2295\} + \\
& 3\{22102^2\} + 4\{221031\} + 10\{22104\} + 4\{221121\} + 7\{22113\} + \{22121^2\} + \\
& 8\{22122\} + 5\{22131\} + 4\{2214\} + \{23643\} + \{23652\} + \{236^21\} + 2\{23742\} + \\
& 2\{23751\} + 3\{2376\} + 2\{23832\} + 4\{23841\} + 5\{2385\} + 2\{2392^2\} + 4\{23931\} + \\
& 7\{2394\} + 4\{231021\} + 7\{23103\} + 2\{23111^2\} + 7\{23112\} + 5\{23121\} + 2\{2313\} + \\
& \{244^3\} + 2\{24642\} + \{24651\} + 3\{246^2\} + \{24732\} + 3\{24741\} + 2\{2475\} + \\
& 3\{2482^2\} + 2\{24831\} + 7\{2484\} + 3\{24921\} + 6\{2493\} + \{24101^2\} + 8\{24102\} + \\
& 4\{24111\} + 5\{2412\} + \{25542\} + \{25632\} + 2\{25641\} + 2\{2565\} + \{2572^2\} + \\
& 2\{25731\} + 4\{2574\} + 3\{25821\} + 5\{2583\} + \{2591^2\} + 6\{2592\} + 5\{25101\} + \\
& 3\{2511\} + \{2642^2\} + \{26541\} + 2\{2662^2\} + \{26631\} + 4\{2664\} + 2\{26721\} + \\
& 3\{2673\} + 6\{2682\} + 4\{2691\} + 4\{2610\} + \{27421\} + \{2752^2\} + \{27531\} + \{2754\} + \\
& \{27621\} + 3\{2763\} + \{2771^2\} + 4\{2772\} + 3\{2781\} + 3\{279\} + \{2842^2\} + 2\{284^2\} + \\
& \{28521\} + \{2853\} + 4\{2862\} + 2\{2871\} + 4\{288\} + \{29421\} + \{2943\} + 2\{2952\} + \\
& 2\{2961\} + 2\{297\} + \{302^3\} + 2\{3042\} + \{3051\} + 3\{306\} + \{3132\} + \{3141\} + \\
& \{315\} + \{322^2\} + 2\{324\} + \{333\} + \{342\} + \{36\}. \\
\{10\} \otimes \{4\} = & \{10^4\} + \{1210^28\} + \{12^28^2\} + \{12^2106\} + \{12^34\} + \{1310^27\} + \{131197\} + \{131296\} + \\
& \{1312105\} + \{13^27^2\} + \{14108^2\} + 2\{1410^26\} + \{141187\} + \{1411105\} + 2\{141286\} + \\
& \{141295\} + 2\{1412104\} + \{1412113\} + \{14122^2\} + \{141385\} + \{141394\} + \\
& \{1413103\} + \{14^26^2\} + 2\{14^284\} + 2\{14^2102\} + \{14^2111\} + \{14^212\} + \{151087\} + \\
& \{151096\} + \{1510^25\} + \{151186\} + 2\{151195\} + \{1511104\} + \{151276\} + \\
& 2\{151285\} + 2\{151294\} + 2\{1512103\} + \{1512112\} + \{15122^1\} + 2\{151375\} + \\
& \{151384\} + 2\{151393\} + \{1513102\} + \{1513111\} + \{151465\} + \{151474\} +
\end{aligned}$$

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$

See page 161 for Explanation of Tables

$$\begin{aligned}
& 2\{151483\} + 2\{151492\} + \{1514101\} + \{151411\} + \{15^25^2\} + \{15^273\} + \{15^291\} + \\
& \{168^3\} + 2\{161086\} + \{161095\} + 3\{1610^{24}\} + \{161176\} + 2\{161185\} + \{161194\} + \\
& 2\{1611103\} + 2\{16126^2\} + \{161275\} + 4\{161284\} + 3\{161293\} + 4\{1612102\} + \\
& \{1612111\} + 2\{1612^2\} + \{161365\} + 2\{161374\} + 3\{161383\} + 2\{161392\} + \\
& 3\{1613101\} + \{161311\} + 3\{161464\} + 2\{161473\} + 4\{161482\} + 3\{161491\} + \\
& 4\{161410\} + 2\{161563\} + 2\{161572\} + 2\{161581\} + 2\{16159\} + 2\{16^24^2\} + \\
& 2\{16^262\} + \{16^271\} + 3\{16^28\} + \{17986\} + \{171076\} + 2\{171085\} + 2\{171094\} + \\
& 2\{1710^23\} + 2\{171175\} + 3\{171184\} + 3\{171193\} + 2\{1711102\} + \{1711^21\} + \\
& 2\{171265\} + 3\{171274\} + 4\{171283\} + 4\{171292\} + 4\{1712101\} + 2\{171211\} + \\
& \{17135^2\} + 2\{171364\} + 4\{171373\} + 4\{171382\} + 4\{171391\} + 3\{171310\} + \\
& 2\{171454\} + 3\{171463\} + 4\{171472\} + 5\{171481\} + 4\{17149\} + 3\{171553\} + \\
& 2\{171562\} + 4\{171571\} + 3\{17158\} + \{171643\} + 2\{171652\} + 3\{171661\} + \\
& 3\{17167\} + \{17^23^2\} + 2\{17^251\} + \{188^26\} + \{18985\} + 2\{18106^2\} + \{181075\} + \\
& 4\{181084\} + 2\{181093\} + 4\{1810^{22}\} + 2\{181165\} + 2\{181174\} + 4\{181183\} + \\
& 3\{181192\} + 3\{1811101\} + 4\{181264\} + 4\{181273\} + 7\{181282\} + 5\{181291\} + \\
& 6\{181210\} + 2\{181354\} + 4\{181363\} + 4\{181372\} + 6\{181381\} + 5\{18139\} + \\
& 2\{18144^2\} + 2\{181453\} + 7\{181462\} + 5\{181471\} + 8\{18148\} + 2\{181543\} + \\
& 3\{181552\} + 5\{181561\} + 5\{18157\} + 4\{181642\} + 3\{181651\} + 6\{18166\} + \\
& \{181732\} + 2\{181741\} + 3\{18175\} + 2\{18^22^2\} + 3\{18^24\} + \{198^25\} + \{1996^2\} + \\
& \{19975\} + \{19984\} + \{199^23\} + \{191065\} + 3\{191074\} + 4\{191083\} + 3\{191092\} + \\
& 3\{1910^21\} + \{19115^2\} + 3\{191164\} + 4\{191173\} + 5\{191182\} + 5\{191191\} + \\
& 4\{191110\} + 2\{191254\} + 5\{191263\} + 6\{191272\} + 7\{191281\} + 7\{19129\} + \\
& \{19134^2\} + 4\{191353\} + 5\{191362\} + 8\{191371\} + 7\{19138\} + 3\{191443\} + \\
& 5\{191452\} + 7\{191461\} + 8\{19147\} + 2\{19153^2\} + 3\{191542\} + 6\{191551\} + \\
& 7\{19156\} + 2\{191632\} + 5\{191641\} + 6\{19165\} + 4\{191731\} + 3\{19174\} + \\
& \{191821\} + 3\{19183\} + 2\{19^21^2\} + \{2086^2\} + 2\{208^24\} + \{20965\} + \{20974\} + \\
& 2\{20983\} + 4\{201064\} + 3\{201073\} + 6\{201082\} + 4\{201091\} + 5\{2010^2\} + \\
& 2\{201154\} + 4\{201163\} + 5\{201172\} + 7\{201181\} + 4\{20119\} + 3\{20124^2\} + \\
& 3\{201253\} + 8\{201262\} + 7\{201271\} + 11\{20128\} + 3\{201343\} + 5\{201352\} + \\
& 8\{201361\} + 8\{20137\} + 6\{201442\} + 7\{201451\} + 11\{20146\} + 3\{201532\} + \\
& 6\{201541\} + 7\{20155\} + 3\{20162^2\} + 3\{201631\} + 9\{20164\} + 3\{201721\} + \\
& 4\{20173\} + 5\{20182\} + \{20191\} + 2\{20^2\} + \{21865\} + \{21874\} + \{218^23\} + \\
& 2\{21964\} + 2\{21973\} + 3\{21982\} + \{219^21\} + 2\{211054\} + 4\{211063\} + \\
& 5\{211072\} + 6\{211081\} + 5\{21109\} + \{21114^2\} + 4\{211153\} + 6\{211162\} + \\
& 7\{211171\} + 8\{21118\} + 3\{211243\} + 6\{211252\} + 9\{211261\} + 10\{21127\} + \\
& 2\{21133^2\} + 5\{211342\} + 8\{211351\} + 10\{21136\} + 4\{211432\} + 7\{211441\} + \\
& 10\{21145\} + \{21152^2\} + 6\{211531\} + 8\{21154\} + 4\{211621\} + 7\{21163\} + \\
& 2\{21171^2\} + 4\{21172\} + 3\{21181\} + \{226^3\} + 2\{22864\} + \{22873\} + 3\{228^22\} + \\
& \{22954\} + 3\{22963\} + 2\{22972\} + 3\{22981\} + \{229^2\} + 3\{22104^2\} + 2\{221053\} + \\
& 7\{221062\} + 6\{221071\} + 9\{22108\} + 3\{221143\} + 5\{221152\} + 8\{221161\} + \\
& 8\{22117\} + \{22123^2\} + 7\{221242\} + 7\{221251\} + 13\{22126\} + 3\{221332\} + \\
& 8\{221341\} + 10\{22135\} + 4\{22142^2\} + 5\{221431\} + 12\{22144\} + 4\{221521\} + \\
& 8\{22153\} + \{22161^2\} + 8\{22162\} + 4\{22171\} + 4\{2218\} + \{23764\} + \{23854\} + \\
& 2\{23863\} + 2\{23872\} + 2\{238^21\} + \{2394^2\} + 2\{23953\} + 4\{23962\} + 4\{23971\} + \\
& 4\{2398\} + 3\{231043\} + 5\{231052\} + 7\{231061\} + 8\{23107\} + \{23113^2\} + \\
& 5\{231142\} + 8\{231151\} + 10\{23116\} + 4\{231232\} + 8\{231241\} + 11\{23125\} + \\
& 2\{23132^2\} + 7\{231331\} + 10\{23134\} + 5\{231421\} + 9\{23143\} + 3\{23151^2\} + \\
& 7\{23152\} + 5\{23161\} + \{2317\} + \{246^24\} + \{24763\} + 2\{2484^2\} + \{24853\} + \\
& 4\{24862\} + 2\{24871\} + 4\{248^2\} + 2\{24943\} + 3\{24952\} + 5\{24961\} + 4\{2497\} + \\
& 6\{241042\} + 6\{241051\} + 11\{24106\} + 4\{241132\} + 7\{241141\} + 9\{24115\} + \\
& 4\{24122^2\} + 5\{241231\} + 13\{24124\} + 5\{241321\} + 9\{24133\} + \{24141^2\} + \\
& 10\{24142\} + 5\{24151\} + 5\{2416\} + \{256^23\} + \{2574^2\} + \{25753\} + \{25762\} + \\
& \{257^21\} + \{25843\} + 3\{25852\} + 4\{25861\} + 3\{2587\} + \{2593^2\} + 4\{25942\} + \\
& 4\{25951\} + 7\{2596\} + 3\{251032\} + 7\{251041\} + 9\{25105\} + 2\{25112^2\} +
\end{aligned}$$

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$
See page 161 for Explanation of Tables

$$\begin{aligned}
 & 6\{251131\} + 10\{25114\} + 5\{251221\} + 10\{25123\} + 3\{25131^2\} + 8\{25132\} + \\
 & 6\{25141\} + 3\{2515\} + \{2664^2\} + 2\{266^22\} + \{26743\} + \{26752\} + 2\{26761\} + \\
 & 4\{26842\} + 3\{26851\} + 6\{2686\} + 2\{26932\} + 5\{26941\} + 6\{2695\} + 4\{26102^2\} + \\
 & 4\{261031\} + 11\{26104\} + 5\{261121\} + 8\{26113\} + \{26121^2\} + 10\{26122\} + \\
 & 6\{26131\} + 5\{2614\} + \{27643\} + \{27652\} + \{276^21\} + 2\{27742\} + 2\{27751\} + \\
 & 3\{2776\} + 2\{27832\} + 4\{27841\} + 5\{2785\} + 2\{2792^2\} + 4\{27931\} + 7\{2794\} + \\
 & 4\{271021\} + 8\{27103\} + 2\{27111^2\} + 8\{27112\} + 6\{27121\} + 3\{2713\} + \{284^3\} + \\
 & 2\{28642\} + \{28651\} + 3\{286^2\} + \{28732\} + 3\{28741\} + 2\{2875\} + 3\{2882^2\} + \\
 & 2\{28831\} + 7\{2884\} + 3\{28921\} + 6\{2893\} + \{28101^2\} + 9\{28102\} + 5\{28111\} + \\
 & 6\{2812\} + \{29542\} + \{29632\} + 2\{29641\} + 2\{2965\} + \{2972^2\} + 2\{29731\} + \\
 & 4\{2974\} + 3\{29821\} + 5\{2983\} + \{2991^2\} + 6\{2992\} + 5\{29101\} + 3\{2911\} + \\
 & \{304^22\} + \{30541\} + 2\{3062^2\} + \{30631\} + 4\{3064\} + 2\{30721\} + 3\{3073\} + \\
 & 6\{3082\} + 4\{3091\} + 5\{3010\} + \{31421\} + \{3152^2\} + \{31531\} + \{3154\} + \{31621\} + \\
 & 3\{3163\} + \{3171^2\} + 4\{3172\} + 3\{3181\} + 3\{319\} + \{3242^2\} + 2\{324^2\} + \{32521\} + \\
 & \{3253\} + 4\{3262\} + 2\{3271\} + 4\{328\} + \{33421\} + \{3343\} + 2\{3352\} + 2\{3361\} + \\
 & 2\{337\} + \{342^3\} + 2\{3442\} + \{3451\} + 3\{346\} + \{3532\} + \{3541\} + \{355\} + \\
 & \{362^2\} + 2\{364\} + \{373\} + \{382\} + \{40\}.
 \end{aligned}$$

$\{n\} \otimes \{5\}$

$$\begin{aligned}
 \{2\} \otimes \{5\} = & \{2^5\} + \{42^3\} + \{4^22\} + \{62^2\} + \{64\} + \{82\} + \{10\}. \\
 \{3\} \otimes \{5\} = & \{54^22\} + \{5^231^2\} + \{642^1\} + \{64^21\} + \{652^2\} + \{6^23\} + \{72^4\} + \{742^2\} + \{7431\} + \\
 & \{74^2\} + \{7521\} + \{762\} + \{832^2\} + \{8421\} + \{843\} + \{852\} + \{861\} + \{92^3\} + \\
 & 2\{942\} + \{96\} + \{1032\} + \{1041\} + \{105\} + \{112^2\} + \{114\} + \{123\} + \{132\} + \\
 & \{15\}. \\
 \{4\} \otimes \{5\} = & \{4^5\} + \{64^32\} + \{6^242^2\} + \{6^24^2\} + \{6^32\} + \{74^31\} + \{75431\} + \{76421\} + \{7643\} + \\
 & \{7652\} + \{7^23^2\} + \{7^241^2\} + \{7^251\} + \{84^22^2\} + 2\{84^3\} + \{85421\} + \{8543\} + \\
 & \{85^21^2\} + \{862^3\} + \{86321\} + 3\{8642\} + \{8651\} + 2\{86^2\} + \{8731^2\} + \{8732\} + \\
 & 2\{8741\} + 2\{8^22^2\} + 2\{8^24\} + \{94^221\} + \{94^23\} + \{95321\} + \{9541^2\} + 2\{9542\} + \\
 & \{962^21\} + 2\{9632\} + 3\{9641\} + \{965\} + \{9721^2\} + \{972^2\} + 2\{9731\} + \{974\} + \\
 & \{9821\} + \{983\} + \{1042^3\} + 3\{1042^2\} + \{1052^21\} + \{10531^2\} + \{10532\} + \\
 & 2\{10541\} + 3\{1062^2\} + 2\{10631\} + 4\{1064\} + 2\{10721\} + 2\{1073\} + 3\{1082\} + \\
 & \{1091\} + \{10^2\} + \{1142^21\} + \{11432\} + 2\{11421\} + 2\{1152^2\} + 2\{11531\} + \{1154\} + \\
 & 2\{11621\} + 3\{1163\} + \{1171^2\} + 2\{1172\} + \{1181\} + \{122^4\} + 2\{1242^2\} + \\
 & \{12431\} + 3\{124^2\} + 2\{12521\} + \{1253\} + 4\{1262\} + \{1271\} + 2\{128\} + \{1332^2\} + \\
 & \{13421\} + 2\{1343\} + 2\{1352\} + 2\{1361\} + \{137\} + \{142^3\} + 3\{1442\} + \{1451\} + \\
 & 2\{146\} + \{1532\} + \{1541\} + \{155\} + \{162^2\} + 2\{164\} + \{173\} + \{182\} + \{20\}. \\
 \{5\} \otimes \{5\} = & \{6^41\} + \{76^242\} + \{7^253^2\} + \{864^23\} + \{86^232\} + \{86^241\} + \{86^25\} + \{874^22\} + \\
 & \{87541\} + \{87631\} + \{8764\} + \{8^24^21\} + \{8^252^2\} + \{8^254\} + \{8^2621\} + \{8^263\} + \\
 & \{8^272\} + \{94^4\} + \{964^22\} + \{96532\} + \{96541\} + \{96^22^2\} + \{96^231\} + 2\{96^24\} + \\
 & \{97432\} + \{974^21\} + 2\{97531\} + \{9754\} + \{97621\} + 2\{9763\} + \{97^21^2\} + \\
 & \{9842^2\} + \{98431\} + 2\{984^2\} + 2\{98521\} + 2\{9853\} + \{9861^2\} + 3\{9862\} + \\
 & \{9871\} + \{98^2\} + \{9^23^21\} + \{9^2421\} + \{9^243\} + \{9^251^2\} + \{9^252\} + \{9^261\} + \\
 & \{1054^22\} + \{106432\} + 2\{1064^21\} + \{10652^2\} + \{106531\} + 2\{10654\} + \\
 & 2\{106^221\} + 3\{1063\} + \{10742^2\} + 2\{107431\} + 3\{1074^2\} + 2\{107521\} + \\
 & 3\{10753\} + \{10761^2\} + 3\{10762\} + \{107^21\} + \{10832^2\} + 3\{108421\} + 3\{10843\} + \\
 & \{10851^2\} + 5\{10852\} + 4\{10861\} + \{1087\} + \{109321\} + \{1093^2\} + \{10941^2\} + \\
 & 4\{10942\} + 3\{10951\} + 2\{1096\} + \{10^22^21\} + \{10^232\} + 2\{10^241\} + 3\{10^25\} + \\
 & \{114^32\} + \{1154^21\} + \{115^231\} + 2\{11642^2\} + 2\{116431\} + 3\{1164^2\} + 2\{116521\} + \\
 & 3\{11653\} + 4\{116^22\} + \{1173^21\} + 3\{117421\} + 4\{11743\} + 3\{11751^2\} + \\
 & 4\{11752\} + 4\{11761\} + \{1182^3\} + 2\{118321\} + \{1183^2\} + 2\{11841^2\} + 7\{11842\} + \\
 & 5\{11851\} + 4\{1186\} + \{1192^21\} + 2\{11931^2\} + 3\{11932\} + 5\{11941\} + 2\{1195\} +
 \end{aligned}$$

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$

See page 161 for Explanation of Tables

$$\begin{aligned}
& 2\{11102^2\} + 3\{111031\} + 3\{11104\} + \{11^21^3\} + \{11^221\} + \{124^31\} + \{12542^2\} + \\
& \{125431\} + 2\{1254^2\} + \{125^221\} + \{12632^2\} + 3\{126421\} + 4\{12643\} + \{12651^2\} + \\
& 5\{12652\} + 3\{126^21\} + \{1272^3\} + 2\{127321\} + \{1273^2\} + 2\{12741^2\} + 7\{12742\} + \\
& 5\{12751\} + 3\{1276\} + 2\{1282^21\} + \{12831^2\} + 5\{12832\} + 7\{12841\} + 5\{1285\} + \\
& \{12921^2\} + 3\{1292^2\} + 4\{12931\} + 5\{1294\} + 3\{121021\} + 4\{12103\} + 2\{12112\} + \\
& \{12^21\} + \{134^22^2\} + 2\{134^3\} + 2\{135421\} + 2\{13543\} + \{135^21^2\} + \{135^22\} + \\
& \{1362^3\} + 2\{136321\} + \{1363^2\} + \{13641^2\} + 7\{13642\} + 4\{13651\} + 4\{136^2\} + \\
& \{1372^21\} + 2\{13731^2\} + 4\{13732\} + 7\{13741\} + 3\{1375\} + \{13821^2\} + 5\{1382^2\} + \\
& 5\{13831\} + 7\{1384\} + 4\{13921\} + 4\{1393\} + \{13101^2\} + 4\{13102\} + \{13111\} + \\
& \{1312\} + \{144^221\} + \{144^23\} + \{1452^3\} + \{145321\} + \{14541^2\} + 4\{14542\} + \\
& \{145^21\} + 2\{1462^21\} + 4\{14632\} + 6\{14641\} + 4\{1465\} + \{14721^2\} + 4\{1472^2\} + \\
& 5\{14731\} + 6\{1474\} + 4\{14821\} + 6\{1483\} + \{1491^2\} + 5\{1492\} + 3\{14101\} + \\
& \{1411\} + \{1542^2\} + 3\{154^22\} + \{1552^21\} + \{15531^2\} + 2\{15532\} + 3\{15541\} + \\
& 4\{1562^2\} + 4\{15631\} + 6\{1564\} + 4\{15721\} + 4\{1573\} + \{1581^2\} + 6\{1582\} + \\
& 2\{1591\} + 2\{1510\} + \{1642^21\} + \{16432\} + 2\{164^21\} + 3\{1652^2\} + 2\{16531\} + \\
& 3\{1654\} + 3\{16621\} + 5\{1663\} + \{1671^2\} + 5\{1672\} + 3\{1681\} + 2\{169\} + \{172^4\} + \\
& 2\{1742^2\} + \{17431\} + 3\{174^2\} + 2\{17521\} + 2\{1753\} + 5\{1762\} + 2\{1771\} + \\
& 3\{178\} + \{1832^2\} + \{18421\} + 2\{1843\} + 3\{1852\} + 3\{1861\} + 2\{187\} + \{192^3\} + \\
& 3\{1942\} + \{1951\} + 2\{196\} + \{2032\} + \{2041\} + 2\{205\} + \{212^2\} + 2\{214\} + \\
& \{223\} + \{232\} + \{25\} . \\
\{6\} \otimes \{5\} = & \{6^5\} + \{86^34\} + \{8^264^2\} + \{8^26^22\} + \{8^342\} + \{8^36\} + \{96^33\} + \{97653\} + \{98643\} + \\
& \{98652\} + \{986^21\} + \{98742\} + \{98751\} + \{98^241\} + \{98^25\} + \{9^25^22\} + \{9^263^2\} + \\
& \{9^2651\} + \{9^2732\} + \{9^275\} + \{9^2831\} + \{106^24^2\} + 2\{106^32\} + \{107643\} + \\
& \{107652\} + \{1076^21\} + \{1072^32\} + \{1084^3\} + \{108543\} + 3\{108642\} + 2\{108651\} + \\
& 3\{1086^2\} + \{108732\} + 2\{108741\} + \{10875\} + 2\{108^22^2\} + \{108^231\} + 3\{108^24\} + \\
& \{10953^2\} + \{109542\} + 2\{109632\} + 3\{109641\} + 2\{10965\} + 2\{109731\} + \\
& 2\{10974\} + \{109821\} + 2\{10983\} + 2\{10^24^22\} + \{10^2541\} + 2\{10^262^2\} + \{10^2631\} + \\
& 4\{10^264\} + \{10^2721\} + 2\{10^273\} + 3\{10^282\} + \{10^291\} + \{10^3\} + \{116^243\} + \\
& \{116^252\} + 2\{116^31\} + \{117543\} + \{11763^2\} + 2\{117642\} + 2\{117651\} + \{1176^2\} + \\
& \{117^241\} + \{117^25\} + \{1184^23\} + 2\{118542\} + \{1185^21\} + 3\{118632\} + \\
& 5\{118641\} + 4\{11865\} + \{11872^2\} + 3\{118731\} + 4\{11874\} + 2\{118^221\} + \\
& 3\{118^23\} + \{1194^23\} + 2\{119532\} + 3\{119541\} + 2\{1195^2\} + \{11962^2\} + \\
& 5\{119631\} + 5\{11964\} + 3\{119721\} + 5\{11973\} + 2\{11981^2\} + 3\{11982\} + \\
& \{119^21\} + \{1110432\} + 2\{11104^21\} + \{111052^2\} + 3\{1110531\} + 4\{111054\} + \\
& 4\{1110621\} + 6\{111063\} + 2\{111071^2\} + 5\{111072\} + 3\{111081\} + \{11109\} + \\
& 2\{11^2431\} + 2\{11^2521\} + 3\{11^253\} + 3\{11^261^2\} + 2\{11^262\} + 3\{11^271\} + \{1264^3\} + \\
& 3\{126^242\} + \{126^251\} + 3\{126^3\} + \{1274^23\} + \{12753^2\} + \{127542\} + \{1275^21\} + \\
& 2\{127632\} + 4\{127641\} + 3\{12765\} + 2\{127^231\} + \{127^24\} + 3\{1284^22\} + \\
& 2\{128532\} + 4\{128541\} + \{1285^2\} + 4\{12862^2\} + 5\{128631\} + 10\{12864\} + \\
& 4\{128721\} + 5\{12873\} + 6\{128^22\} + 2\{129432\} + 3\{1294^21\} + 2\{12952^2\} + \\
& 5\{129531\} + 5\{12954\} + 6\{129621\} + 10\{12963\} + 3\{12971^2\} + 6\{12972\} + \\
& 4\{12981\} + 3\{121042^2\} + 3\{1210431\} + 6\{12104^2\} + 5\{1210521\} + 6\{121053\} + \\
& 2\{121061^2\} + 12\{121062\} + 7\{121071\} + 5\{12108\} + \{121132^2\} + \{12113^21\} + \\
& 3\{1211421\} + 4\{121143\} + 3\{121151^2\} + 7\{121152\} + 6\{121161\} + 2\{12117\} + \\
& \{122^22^3\} + \{122^2321\} + 5\{122^242\} + 2\{122^251\} + 5\{12^26\} + \{1364^23\} + \{136542\} + \\
& 2\{136^232\} + 3\{136^241\} + 3\{136^25\} + 2\{1374^22\} + 2\{137532\} + 3\{137541\} + \\
& \{1375^2\} + \{13762^2\} + 5\{137631\} + 6\{13764\} + \{137^221\} + 3\{137^23\} + 2\{138432\} + \\
& 4\{1384^21\} + 3\{13852^2\} + 5\{138531\} + 7\{13854\} + 7\{138621\} + 11\{13863\} + \\
& 3\{13871^2\} + 8\{13872\} + 4\{138^21\} + \{1393^22\} + 2\{13942^2\} + 5\{139431\} + \\
& 5\{1394^2\} + 6\{139521\} + 10\{13953\} + 5\{13961^2\} + 12\{13962\} + 8\{13971\} + \\
& 3\{1398\} + \{131032^2\} + \{13103^21\} + 6\{1310421\} + 8\{131043\} + 4\{131051^2\} + \\
& 12\{131052\} + 12\{131061\} + 6\{13107\} + 3\{1311321\} + 3\{13113^2\} + 4\{131141^2\} + \\
& 8\{131142\} + 9\{131151\} + 5\{13116\} + \{13122^21\} + \{131231^2\} + 4\{131232\} + \\
& 6\{131241\} + 5\{13125\} + \{13^221^2\} + 3\{13^231\} + \{13^24\} + \{144^4\} + 2\{1464^22\} +
\end{aligned}$$

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$
See page 161 for Explanation of Tables

$$\begin{aligned}
& \{146532\} + 2\{146541\} + 3\{146^22\} + 2\{146^231\} + 6\{146^24\} + 2\{147432\} + \\
& 3\{14741\} + \{14752\} + 4\{147531\} + 5\{14754\} + 5\{147621\} + 8\{14763\} + \\
& 3\{147^21^2\} + 2\{147^22\} + 4\{14842^2\} + 4\{148431\} + 8\{1484^2\} + 7\{148521\} + \\
& 9\{14853\} + 3\{14861^2\} + 16\{14862\} + 7\{14871\} + 5\{148^2\} + \{14932^2\} + 2\{1493^21\} + \\
& 7\{149421\} + 9\{14943\} + 5\{14951^2\} + 13\{14952\} + 13\{14961\} + 5\{1497\} + \\
& 2\{14102^3\} + 4\{1410321\} + 2\{14103^2\} + 3\{141041^2\} + 15\{141042\} + 13\{141051\} + \\
& 12\{14106\} + 2\{14112^21\} + 3\{141131^2\} + 7\{141132\} + 11\{141141\} + 7\{14115\} + \\
& \{141221^2\} + 5\{14122^2\} + 5\{141231\} + 9\{14124\} + 3\{141321\} + 3\{14133\} + \\
& 3\{14^22\} + \{1554^22\} + \{156432\} + 3\{1564^21\} + 2\{15652^2\} + 2\{156531\} + \\
& 3\{15654\} + 3\{156^221\} + 6\{156^23\} + 2\{15742^2\} + 4\{157431\} + 5\{1574^2\} + \\
& 5\{157521\} + 7\{15753\} + 3\{15761^2\} + 9\{15762\} + 4\{157^21\} + 2\{15832^2\} + \\
& \{1583^21\} + 7\{158421\} + 9\{15843\} + 4\{15851^2\} + 14\{15852\} + 13\{15861\} + \\
& 5\{1587\} + \{1592^3\} + 4\{159321\} + 4\{1593^2\} + 5\{15941^2\} + 14\{15942\} + \\
& 13\{15951\} + 9\{1596\} + 3\{15102^21\} + 3\{151031^2\} + 9\{151032\} + 14\{151041\} + \\
& 11\{15105\} + 2\{151121^2\} + 5\{15112^2\} + 9\{151131\} + 8\{15114\} + 5\{151221\} + \\
& 7\{15123\} + 2\{15131^2\} + 3\{15132\} + \{15141\} + \{164^32\} + \{1654^21\} + \{165^231\} + \\
& 3\{16642^2\} + 2\{166431\} + 5\{1664^2\} + 3\{166521\} + 4\{16653\} + 8\{166^22\} + \\
& \{16732^2\} + \{1673^21\} + 5\{167421\} + 7\{16743\} + 4\{16751^2\} + 9\{16752\} + \\
& 9\{16761\} + \{167^2\} + 2\{1682^3\} + 4\{168321\} + 2\{1683^2\} + 3\{16841^2\} + 16\{16842\} + \\
& 12\{16851\} + 12\{1686\} + 3\{1692^21\} + 3\{16931^2\} + 9\{16932\} + 14\{16941\} + \\
& 10\{1695\} + \{161021^2\} + 8\{16102^2\} + 10\{161031\} + 14\{16104\} + \{16111^3\} + \\
& 7\{161121\} + 8\{16113\} + \{16121^2\} + 8\{16122\} + 3\{16131\} + 2\{1614\} + \{174^31\} + \\
& \{17542^2\} + \{175431\} + 2\{1754^2\} + \{175^221\} + \{17632^2\} + 4\{176421\} + 5\{17643\} + \\
& \{17651^2\} + 7\{17652\} + 5\{176^21\} + \{1772^3\} + 3\{177321\} + 2\{1773^2\} + 3\{17741^2\} + \\
& 11\{17742\} + 9\{17751\} + 6\{1776\} + 3\{1782^21\} + 2\{17831^2\} + 9\{17832\} + \\
& 13\{17841\} + 10\{1785\} + 2\{17921^2\} + 6\{1792^2\} + 10\{17931\} + 11\{1794\} + \\
& 8\{171021\} + 10\{17103\} + 2\{17111^2\} + 7\{17112\} + 4\{17121\} + \{1713\} + \{184^22^2\} + \\
& 2\{184^3\} + 2\{185421\} + 2\{18543\} + \{185^21^2\} + \{185^22\} + 2\{1862^2\} + 2\{186321\} + \\
& \{1863^2\} + \{18641^2\} + 9\{18642\} + 5\{18651\} + 7\{186^2\} + 2\{18722^1\} + 2\{18731^2\} + \\
& 6\{18732\} + 10\{18741\} + 6\{1875\} + \{18821^2\} + 8\{1882^2\} + 8\{18831\} + 13\{1884\} + \\
& 7\{18921\} + 9\{1893\} + 2\{18101^2\} + 10\{18102\} + 4\{18111\} + 4\{1812\} + \{194^221\} + \\
& \{194^23\} + \{1952^3\} + \{195321\} + \{19541^2\} + 4\{19542\} + \{195^21\} + 2\{19622^1\} + \\
& 5\{19632\} + 7\{19641\} + 5\{1965\} + \{19721^2\} + 5\{1972^2\} + 7\{19731\} + 8\{1974\} + \\
& 6\{19821\} + 9\{1983\} + 2\{1991^2\} + 8\{1992\} + 5\{19101\} + 2\{1911\} + \{2042^3\} + \\
& 3\{204^22\} + \{2052^21\} + \{20531^2\} + 2\{20532\} + 3\{20541\} + 5\{2062^2\} + 4\{20631\} + \\
& 8\{2064\} + 5\{20721\} + 6\{2073\} + \{2081^2\} + 9\{2082\} + 4\{2091\} + 4\{2010\} + \\
& \{2142^21\} + \{21432\} + 2\{214^21\} + 3\{2152^2\} + 2\{21531\} + 3\{2154\} + 3\{21621\} + \\
& 6\{2163\} + \{2171^2\} + 6\{2172\} + 4\{2181\} + 3\{219\} + \{222^4\} + 2\{2242^2\} + \{22431\} + \\
& 3\{224^2\} + 2\{22521\} + 2\{2253\} + 6\{2262\} + 3\{2271\} + 4\{228\} + \{2332^2\} + \\
& \{23421\} + 2\{2343\} + 3\{2352\} + 3\{2361\} + 2\{237\} + \{242^3\} + 3\{2442\} + \{2451\} + \\
& 3\{246\} + \{2532\} + \{2541\} + 2\{255\} + \{262^2\} + 2\{264\} + \{273\} + \{282\} + \{30\}.
\end{aligned}$$

$$\{n\} \otimes \{6\}$$

$$\begin{aligned}
\{2\} \otimes \{6\} &= \{2^6\} + \{42^4\} + \{4^22^2\} + \{4^3\} + \{62^3\} + \{642\} + \{6^2\} + \{82^2\} + \{84\} + \{102\} + \{12\}. \\
\{3\} \otimes \{6\} &= \{5^2431\} + \{5^31^3\} + \{64^22^2\} + \{64^3\} + \{65321^2\} + \{65421\} + \{6^22^3\} + \{6^242\} + \{6^3\} + \\
& \{742^31\} + \{74^221\} + \{74^23\} + \{752^3\} + \{75321\} + \{7541^2\} + \{7542\} + \{762^21\} + \\
& \{7632\} + \{7641\} + \{7^231\} + \{82^5\} + \{842^3\} + \{84321\} + 2\{84^22\} + \{852^21\} + \\
& \{8531^2\} + \{8532\} + \{8541\} + 2\{862^2\} + \{8631\} + 2\{864\} + \{8721\} + \{8^22\} + \\
& \{932^3\} + \{942^21\} + \{9432\} + 2\{94^21\} + 2\{952^2\} + \{9531\} + \{9621\} + 2\{963\} + \\
& \{972\} + \{102^4\} + 2\{1042^2\} + \{10431\} + 2\{104^2\} + \{10521\} + \{1053\} + 2\{1062\} + \\
& \{1071\} + \{108\} + \{1132^2\} + \{11421\} + \{1143\} + 2\{1152\} + \{1161\} + \{122^3\} + \\
& 2\{1242\} + 2\{126\} + \{1332\} + \{1341\} + \{135\} + \{142^2\} + \{144\} + \{153\} + \{162\} + \\
& \{18\}.
\end{aligned}$$

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$
See page 161 for Explanation of Tables

$$\begin{aligned} \{4\} \otimes \{6\} = & \{4^6\} + \{64^42\} + \{6^24^22^2\} + \{6^24^3\} + \{6^32^3\} + \{6^342\} + \{6^4\} + \{74^41\} + \{754^231\} + \\ & \{764^221\} + \{764^23\} + \{765321\} + \{76542\} + \{76^232\} + \{76^241\} + \{7^243^2\} + \\ & 2\{7^24^21^2\} + \{7^2532\} + \{7^2541\} + \{7^25^2\} + \{7^2621^2\} + \{7^2631\} + \{7^33\} + \{84^32^2\} + \\ & 2\{84^4\} + \{854^221\} + \{854^23\} + \{85^23^2\} + \{85^241^2\} + \{864^23\} + \{864321\} + \\ & 4\{864^22\} + \{8652^21\} + \{86531^2\} + \{86532\} + 2\{86541\} + 3\{86^22^2\} + \{86^231\} + \\ & 3\{86^24\} + \{8742^21\} + \{87431^2\} + 2\{87432\} + 2\{874^21\} + \{87521^2\} + \{8752^2\} + \\ & 4\{87531\} + \{8754\} + 2\{87621\} + 2\{8763\} + 2\{87^21^2\} + \{8^22^4\} + \{8^23^21^2\} + \\ & 3\{8^242^2\} + \{8^2431\} + 4\{8^24^2\} + \{8^251^3\} + 2\{8^2521\} + \{8^253\} + 4\{8^262\} + 2\{8^3\} + \\ & \{94^321\} + \{94^33\} + \{954321\} + \{954^21^2\} + 2\{954^22\} + \{95^231^2\} + \{95^232\} + \\ & \{95^241\} + 2\{9642^21\} + \{96431^2\} + 3\{96432\} + 4\{964^21\} + \{96521^2\} + 3\{9652^2\} + \\ & 3\{96531\} + 2\{9654\} + 2\{96^221\} + 3\{96^23\} + \{9732^21\} + \{973^22\} + 2\{97421^2\} + \\ & 2\{9742^2\} + 5\{97431\} + 2\{974^2\} + \{9751^3\} + 5\{97521\} + 4\{9753\} + 2\{9761^2\} + \\ & 3\{9762\} + \{97^21\} + \{98321^2\} + \{983^21\} + 5\{98421\} + 3\{9843\} + \\ & 2\{9851^2\} + 4\{9852\} + 3\{9861\} + \{9^22^21^2\} + \{9^2321\} + 2\{9^23^2\} + 2\{9^241^2\} + \\ & \{9^242\} + \{9^251\} + \{104^22^3\} + 3\{104^23\} + \{1054^221\} + \{105431^2\} + 2\{105432\} + \\ & 3\{1054^21\} + 2\{105^221^2\} + 2\{105^231\} + \{1062^4\} + \{10632^21\} + \{1063^21^2\} + \\ & \{106421^2\} + 6\{10642^2\} + 4\{106431\} + 6\{1064^2\} + 5\{106521\} + 3\{10653\} + \\ & 6\{106^22\} + \{1072^31\} + \{107321^2\} + 2\{10732^2\} + 2\{1073^21\} + \{10741^3\} + \\ & 7\{107421\} + 6\{10743\} + 4\{10751^2\} + 5\{10752\} + 4\{10761\} + 3\{1082^3\} + \\ & \{10831^3\} + 4\{108321\} + 2\{10841^2\} + 10\{10842\} + 4\{10851\} + 4\{1086\} + \\ & 2\{1092^21\} + \{10931^2\} + 3\{10932\} + 4\{10941\} + 2\{1095\} + 3\{10^22^2\} + \{10^231\} + \\ & 4\{10^24\} + \{114^22^21\} + \{114^232\} + 2\{114^31\} + \{11532^21\} + \{115421^2\} + 3\{11542^2\} + \\ & 4\{115431\} + 2\{1154^2\} + \{115^21^3\} + 2\{115^221\} + \{115^23\} + \{1162^31\} + \{116321^2\} + \\ & 3\{11632^2\} + \{1163^21\} + 7\{116421\} + 6\{11643\} + 2\{11651^2\} + 6\{11652\} + \\ & 3\{116^21\} + \{1172^21^2\} + 2\{1172^3\} + 5\{117321\} + 3\{1173^2\} + 4\{11741^2\} + \\ & 8\{11742\} + 6\{11751\} + 2\{1176\} + 3\{1182^21\} + 2\{11831^2\} + 6\{11832\} + \\ & 7\{11841\} + 4\{1185\} + \{11921^2\} + 2\{1192^2\} + 5\{11931\} + 2\{1194\} + 2\{111021\} + \\ & 2\{11103\} + \{11^21^2\} + \{1242^4\} + 3\{124^22^2\} + \{124^231\} + 4\{124^3\} + \{1252^31\} + \\ & \{125321^2\} + \{12532^2\} + \{1253^21\} + 5\{125421\} + 3\{12543\} + 2\{125^21^2\} + \{125^22\} + \\ & 4\{1262^3\} + 4\{126321\} + \{1263^2\} + 2\{12641^2\} + 11\{12642\} + 4\{12651\} + 5\{126^2\} + \\ & 3\{1272^21\} + 3\{12731^2\} + 6\{12732\} + 8\{12741\} + 2\{1275\} + \{12821^2\} + 7\{1282^2\} + \\ & 4\{12831\} + 7\{1284\} + 3\{12921\} + 4\{1293\} + 4\{12102\} + 2\{12^2\} + \{1342^31\} + \\ & \{13432^2\} + 2\{134^221\} + 3\{134^23\} + 2\{1352^3\} + 3\{135321\} + \{1353^2\} + 2\{13541^2\} + \\ & 5\{13542\} + \{135^21\} + 3\{1362^21\} + \{13631^2\} + 6\{13632\} + 7\{13641\} + 3\{1365\} + \\ & \{13721^2\} + 4\{1372^2\} + 6\{13731\} + 5\{1374\} + 4\{13821\} + 5\{1383\} + \{1391^2\} + \\ & 3\{1392\} + 2\{13101\} + \{142^5\} + 2\{1442^3\} + \{144321\} + 5\{144^22\} + 2\{1452^21\} + \\ & \{14531^2\} + 3\{14532\} + 4\{14541\} + 6\{1462^2\} + 4\{14631\} + 7\{1464\} + 4\{14721\} + \\ & 4\{1473\} + 6\{1482\} + 2\{1491\} + 2\{1410\} + \{1532^3\} + \{1542^21\} + 2\{15432\} + \\ & 3\{154^21\} + 3\{1552^2\} + 3\{15531\} + 2\{1554\} + 3\{15621\} + 5\{1563\} + \{1571^2\} + \\ & 4\{1572\} + 2\{1581\} + \{159\} + \{162^4\} + 3\{1642\} + \{16431\} + 4\{164^2\} + 2\{16521\} + \\ & 2\{1653\} + 5\{1662\} + 2\{1671\} + 3\{168\} + \{1732^2\} + \{17421\} + 2\{1743\} + \\ & 3\{1752\} + 2\{1761\} + \{177\} + \{182^3\} + 3\{1842\} + \{1851\} + 3\{186\} + \{1932\} + \\ & \{1941\} + \{195\} + \{202^2\} + 2\{204\} + \{213\} + \{222\} + \{24\}. \end{aligned}$$

$\{n\} \otimes \{7\}$

$$\begin{aligned} \{2\} \otimes \{7\} = & \{2^7\} + \{42^5\} + \{4^22^3\} + \{4^32\} + \{62^4\} + \{642^2\} + \{64^2\} + \{6^22\} + \{82^3\} + \{842\} + \\ & \{86\} + \{102^2\} + \{104\} + \{122\} + \{14\}. \\ \{3\} \otimes \{7\} = & \{5^33^2\} + \{5^341^2\} + \{654321\} + \{654^22\} + \{65^221^3\} + \{65^231^2\} + \{6^23^21^3\} + \\ & \{6^242^21\} + \{6^24^21\} + \{6^252^2\} + \{6^33\} + \{74^22^3\} + \{74^32\} + \{7532^21^2\} + \{7542^21\} + \\ & \{75431^2\} + \{75432\} + \{754^21\} + \{75^221^2\} + \{75^231\} + \{762^4\} + \{7632^21\} + \\ & \{76421^2\} + 2\{7642^2\} + \{76431\} + \{764^2\} + \{76521\} + \{76^22\} + \{7^22^31\} + \{7^23^21\} + \end{aligned}$$

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$

See page 161 for Explanation of Tables

$$\begin{aligned}
 & \{7^2421\} + \{7^243\} + \{7^251^2\} + \{842^41\} + \{84^22^21\} + \{84^232\} + \{84^31\} + \{852^4\} + \\
 & \{8532^21\} + \{853^21^2\} + \{85421^2\} + 2\{8542^2\} + 2\{85431\} + \{854^2\} + \{85^21^3\} + \\
 & \{85^221\} + \{862^31\} + \{86321^2\} + 2\{8632^2\} + 3\{86421\} + 2\{8643\} + 2\{8652\} + \\
 & \{86^21\} + \{872^3\} + 2\{87321\} + \{8741^2\} + 2\{8742\} + \{8751\} + \{8^22^21\} + \{8^232\} + \\
 & \{8^241\} + \{8^25\} + \{92^6\} + \{942^4\} + \{9432^21\} + 2\{94^22^2\} + \{94^231\} + 2\{94^3\} + \\
 & \{952^31\} + \{95321^2\} + \{9532^2\} + \{953^21\} + 3\{95421\} + \{9543\} + \{95^21^2\} + \\
 & 3\{962^3\} + 2\{96321\} + \{963^2\} + \{9641^2\} + 4\{9642\} + \{9651\} + 2\{96^2\} + \{972^21\} + \\
 & \{9731^2\} + 2\{9732\} + 2\{9741\} + 2\{982^2\} + \{9831\} + \{984\} + \{1032^4\} + \{1042^31\} + \\
 & \{10432^2\} + 2\{104^221\} + 2\{104^23\} + 2\{1052^3\} + 2\{105321\} + \{10541^2\} + 3\{10542\} + \\
 & 2\{1062^21\} + 3\{10632\} + 3\{10641\} + \{1065\} + 2\{1072^2\} + 2\{10731\} + 2\{1074\} + \\
 & \{10821\} + 2\{1083\} + \{1092\} + \{10^21\} + \{112^5\} + 2\{1142^3\} + \{114321\} + 3\{114^22\} + \\
 & \{1152^21\} + \{11531^2\} + 2\{11532\} + 2\{11541\} + 3\{1162^2\} + 2\{11631\} + 3\{1164\} + \\
 & 2\{11721\} + \{1173\} + 2\{1182\} + \{1232^3\} + \{1242^21\} + \{12432\} + 2\{124^21\} + \\
 & 3\{1252^2\} + \{12531\} + \{1254\} + \{12621\} + 3\{1263\} + 2\{1272\} + \{1281\} + \{129\} + \\
 & \{132^4\} + 2\{1342^2\} + \{13431\} + 2\{134\} + \{13521\} + \{1353\} + 3\{1362\} + \{1371\} + \\
 & \{138\} + \{1432^2\} + \{14421\} + \{1443\} + 2\{1452\} + \{1461\} + \{147\} + \{152^3\} + \\
 & 2\{1542\} + 2\{156\} + \{1632\} + \{1641\} + \{165\} + \{172^2\} + \{174\} + \{183\} + \{192\} + \\
 & \{21\}. \\
 \{4\} \otimes \{7\} = & \{4^7\} + \{64^52\} + \{6^24^32^2\} + \{6^24^4\} + \{6^342^3\} + \{6^34^22\} + \{6^42^2\} + \{6^44\} + \{74^51\} + \\
 & \{754^331\} + \{764^321\} + \{764^33\} + \{7654321\} + \{7654^22\} + \{76^242^21\} + \{76^2432\} + \\
 & \{76^24^21\} + \{76^252^2\} + \{76^2531\} + \{76^33\} + \{7^24^23^2\} + 2\{7^24^31^2\} + \{7^25431^2\} + \\
 & \{7^25432\} + \{7^254^21\} + \{7^25^22^2\} + \{7^25^24\} + \{7^263^22\} + \{7^26421^2\} + 2\{7^26431\} + \\
 & \{7^26521\} + \{7^2653\} + \{7^26^21^2\} + \{7^341^3\} + \{7^3421\} + \{7^343\} + \{7^352\} + \{7^4\} + \\
 & \{84^42^2\} + 2\{84^5\} + \{854^321\} + \{854^33\} + \{85^243^2\} + \{85^24^21^2\} + \{864^22^3\} + \\
 & \{864^2321\} + 4\{864^32\} + \{86542^21\} + \{865431^2\} + 2\{865432\} + 2\{8654^21\} + \\
 & \{865^221^2\} + \{865^231\} + \{86^24^2\} + \{86^232^2\} + \{86^23^21^2\} + 4\{86^242^2\} + 2\{86^2431\} + \\
 & 4\{86^24^2\} + 2\{86^2521\} + \{86^253\} + 3\{86^22\} + \{874^22^21\} + \{874^231^2\} + 2\{874^232\} + \\
 & 3\{874^31\} + \{87532^21\} + \{8753^22\} + 2\{875421^2\} + 2\{87542^2\} + 5\{875431\} + \\
 & \{8754^2\} + 2\{875^221\} + 2\{875^23\} + \{876321^2\} + 2\{87632^2\} + 2\{8763^21\} + \\
 & \{87641^3\} + 6\{876421\} + 4\{87643\} + 2\{87651^2\} + 4\{87652\} + \{876^21\} + \\
 & \{87^22^21^2\} + 2\{87^2321\} + 3\{87^23^2\} + 3\{87^241^2\} + \{87^242\} + 3\{87^251\} + \{87^242^4\} + \\
 & \{8^243^21^2\} + 4\{8^242^2\} + \{8^2431\} + 4\{8^24^3\} + \{8^252^21\} + \{8^25321^2\} + \{8^2532^2\} + \\
 & 2\{8^253^21\} + \{8^2541^3\} + 4\{8^25421\} + 4\{8^2543\} + 3\{8^2521^2\} + 3\{8^262^3\} + \{8^2631^3\} + \\
 & 4\{8^26321\} + \{8^2641^2\} + 9\{8^2642\} + 3\{8^2651\} + 3\{8^26^2\} + \{8^272^21\} + 3\{8^2731^2\} + \\
 & 3\{8^2732\} + 4\{8^2741\} + \{8^31^4\} + 3\{8^32^2\} + 4\{8^34\} + \{94^21\} + \{94^3\} + \{954^2321\} + \\
 & \{954^31^2\} + 2\{954^32\} + \{95^2431^2\} + \{95^2432\} + \{95^24^21\} + \{95^31\} + 2\{964^22^21\} + \\
 & \{964^231^2\} + 3\{964^32\} + 4\{964^31\} + \{96532^21\} + \{9653^21^2\} + \{9653^22\} + \\
 & 2\{965421^2\} + 4\{96542^2\} + 5\{965431\} + 3\{9654^2\} + \{965^21^3\} + 2\{965^221\} + \\
 & \{965^23\} + \{96^23^21\} + \{96^2321^2\} + 3\{96^232^2\} + \{96^23^21\} + 6\{96^2421\} + 5\{96^243\} + \\
 & \{96^251^2\} + 4\{96^252\} + 2\{96^31\} + \{97432^21\} + \{9743^22\} + 3\{974^22^21\} + 3\{974^22^2\} + \\
 & 6\{974^231\} + 2\{974^3\} + \{9752^31\} + 2\{975321^2\} + 3\{97532^2\} + 4\{9753^21\} + \\
 & 2\{97541^3\} + 10\{975421\} + 7\{97543\} + 3\{975^21^2\} + 5\{975^22\} + 2\{9762^21^2\} + \\
 & 2\{9762^3\} + \{97631^3\} + 8\{976321\} + 5\{9763^2\} + 7\{97641^2\} + 10\{97642\} + \\
 & 6\{97651\} + \{976^2\} + \{97^221^3\} + 2\{97^22^21\} + 4\{97^231^2\} + 5\{97^232\} + 5\{97^241\} + \\
 & 2\{97^25\} + \{9842^21\} + 2\{984321^2\} + 3\{98432^2\} + 2\{9843^21\} + 7\{984^221\} + \\
 & 5\{984^23\} + \{9852^21^2\} + 3\{9852^3\} + 2\{98531^3\} + 9\{985321\} + 4\{9853^2\} + \\
 & 7\{98541^2\} + 11\{98542\} + 4\{985^21\} + \{98621^3\} + 6\{9862^21\} + 6\{98631^2\} + \\
 & 11\{98632\} + 12\{98641\} + 5\{9865\} + 4\{98721^2\} + 5\{9872^2\} + 8\{98731\} + \\
 & 4\{9874\} + 3\{98^221\} + 3\{98^23\} + \{9^23^22\} + 2\{9^242^21^2\} + 4\{9^24321\} + 3\{9^243^2\} + \\
 & 4\{9^24^21^2\} + 2\{9^24^22\} + \{9^2521^3\} + 4\{9^252^21\} + 4\{9^2531^2\} + 7\{9^2532\} + 6\{9^2541\} + \\
 & 2\{9^25^2\} + 4\{9^2621^2\} + 2\{9^262^2\} + 8\{9^2631\} + 2\{9^264\} + \{9^271^3\} + 4\{9^2721\} + \\
 & 3\{9^273\} + 2\{9^281^2\} + \{104^32^3\} + 3\{104^22\} + \{1054^22^21\} + \{1054^231^2\} + \\
 & 2\{1054^232\} + 3\{1054^31\} + \{105^23^22\} + 2\{105^2421^2\} + 3\{105^2431\} + \{105^31^3\} + \\
 & \{105^321\} + \{105^33\} + \{10642^4\} + \{106432^21\} + \{10643^21^2\} + \{1064^221^2\} +
 \end{aligned}$$

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$

See page 161 for Explanation of Tables

$$\begin{aligned}
& 7\{1064^22^2\} + 5\{1064^231\} + 7\{1064^3\} + \{10652^31\} + 3\{1065321^2\} + 3\{106532^2\} + \\
& 3\{10653^21\} + \{106541^3\} + 10\{1065421\} + 6\{106543\} + 3\{1065^21^2\} + 2\{1065^22\} + \\
& 5\{106^22^3\} + \{106^231^3\} + 6\{106^2321\} + \{106^23^2\} + 2\{106^241^2\} + 13\{106^242\} + \\
& 4\{106^251\} + 4\{106^3\} + 2\{10742^21\} + 2\{1074321^2\} + 4\{107432^2\} + 3\{10743^21\} + \\
& 2\{10742^31\} + 10\{1074^221\} + 8\{1074^23\} + 3\{10752^21^2\} + 3\{10752^3\} + 2\{107531^3\} + \\
& 12\{1075321\} + 7\{10753^2\} + 11\{107541^2\} + 14\{107542\} + 6\{1075^21\} + \{107621^3\} + \\
& 8\{10762^21\} + 8\{107631^2\} + 14\{107632\} + 15\{107641\} + 5\{10765\} + 5\{107^221^2\} + \\
& \{107^22^2\} + 10\{107^231\} + 3\{107^24\} + \{1082^5\} + \{10832^31\} + \{1083^221^2\} + \{1083^31\} + \\
& \{10842^21^2\} + 6\{10842^3\} + 2\{108431^3\} + 10\{1084321\} + 2\{10843^2\} + 4\{1084^21^2\} + \\
& 17\{1084^22\} + 2\{108521^3\} + 10\{10852^21\} + 12\{108531^2\} + 15\{108532\} + \\
& 17\{108541\} + \{1085^2\} + \{10861^4\} + 6\{108621^2\} + 17\{10862^2\} + 17\{108631\} + \\
& 16\{10864\} + 3\{10871^3\} + 11\{108721\} + 7\{10873\} + 7\{108^22\} + \{10932^21^2\} + \\
& 2\{10932^3\} + \{1093^21^3\} + 2\{1093^221\} + \{1093^3\} + \{109421^3\} + 7\{10942^21\} + \\
& 6\{109431^2\} + 10\{109432\} + 10\{109421\} + 8\{109521^2\} + 10\{10952^2\} + 14\{109531\} + \\
& 7\{10954\} + 2\{10961^3\} + 13\{109621\} + 11\{10963\} + 4\{10971^2\} + 6\{10972\} + \\
& 2\{10981\} + 2\{10^22^4\} + 2\{10^232^21\} + 2\{10^23^21^2\} + \{10^241^4\} + 2\{10^2421^2\} + \\
& 9\{10^242^2\} + 5\{10^2431\} + 8\{10^24^2\} + \{10^251^3\} + 8\{10^2521\} + 5\{10^253\} + \{10^261^2\} + \\
& 10\{10^262\} + 4\{10^271\} + 3\{10^28\} + \{114^32^21\} + \{114^332\} + 2\{114^41\} + \{115432^21\} + \\
& \{1154^221^2\} + 3\{1154^22^2\} + 4\{1154^231\} + 2\{1154^3\} + \{115^2321^2\} + \{115^232^2\} + \\
& 2\{115^231\} + 2\{115^241^3\} + 4\{115^2421\} + 3\{115^243\} + 2\{115^31^2\} + 2\{11642^31\} + \\
& 2\{1164321^2\} + 4\{116432^2\} + 2\{11643^21\} + 10\{1164^221\} + 8\{1164^23\} + \\
& 2\{11652^21^2\} + 4\{11652^3\} + 2\{116531^3\} + 10\{1165321\} + 3\{11653^2\} + 7\{116541^2\} + \\
& 13\{116542\} + 3\{1165^21\} + 6\{116^221^2\} + 3\{116^231^2\} + 10\{116^232\} + 11\{116^241\} + \\
& 4\{116^25\} + \{11732^21\} + \{1173^221^2\} + \{1173^22^2\} + 3\{11742^21^2\} + 5\{11742^3\} + \\
& \{117431^3\} + 11\{1174321\} + 6\{11743^2\} + 8\{1174^22^2\} + 14\{1174^22\} + 2\{117521^3\} + \\
& 11\{11752^21\} + 12\{117531^2\} + 18\{117532\} + 18\{117541\} + 4\{1175^2\} + 8\{117621^2\} + \\
& 12\{11762^2\} + 19\{117631\} + 11\{11764\} + 2\{117^21^3\} + 8\{117^221\} + 6\{117^23\} + \\
& \{1182^41\} + \{11832^21^2\} + 3\{11832^3\} + \{1183^21^3\} + 4\{1183^221\} + \{118421^3\} + \\
& 12\{11842^21\} + 9\{118431^2\} + 17\{118432\} + 16\{1184^21\} + \{11851^4\} + 11\{118521^2\} + \\
& 17\{11852^2\} + 23\{118531\} + 14\{11854\} + 2\{11861^3\} + 21\{118621\} + 18\{11863\} + \\
& 6\{11871^2\} + 11\{11872\} + 4\{118^21\} + \{1192^31^2\} + \{1192^4\} + \{119321^3\} + \\
& 6\{11932^21\} + 2\{1193^21^2\} + 5\{1193^22\} + 8\{119421^2\} + 12\{11942^2\} + 18\{119431\} + \\
& 7\{1194^2\} + 3\{11951^3\} + 19\{119521\} + 15\{11953\} + 9\{11961^2\} + 14\{11962\} + \\
& 7\{11971\} + \{1198\} + 2\{11102^31\} + 3\{1110321^2\} + 6\{111032^2\} + 4\{11103^21\} + \\
& \{111041^3\} + 13\{1110421\} + 10\{111043\} + 6\{111051^2\} + 13\{111052\} + 8\{111061\} + \\
& 3\{11107\} + \{112^22^12\} + 4\{112^321\} + 3\{112^32^2\} + 4\{112^41^2\} + 3\{112^42\} + 5\{112^51\} + \\
& \{124^22^4\} + 3\{124^32^2\} + \{124^331\} + 4\{124^4\} + \{12542^31\} + \{1254321^2\} + \\
& 2\{125432^2\} + \{12543^21\} + 6\{1254^221\} + 4\{1254^23\} + 2\{125^22^21^2\} + \{125^231^3\} + \\
& 4\{125^2321\} + 3\{125^23^2\} + 5\{125^241^2\} + 3\{125^242\} + \{125^31\} + \{1262^5\} + \\
& \{12632^31\} + \{1263^221^2\} + \{12642^21^2\} + 7\{12642^3\} + \{126431^3\} + 9\{1264321\} + \\
& 2\{12643^2\} + 4\{1264^21^2\} + 17\{1264^22\} + \{126521^3\} + 9\{12652^21\} + 8\{126531^2\} + \\
& 12\{126532\} + 13\{126541\} + \{1265^2\} + 2\{126^221^2\} + 13\{126^22^2\} + 9\{126^231\} + \\
& 12\{126^24\} + \{1272^41\} + 2\{12732^21^2\} + 3\{12732^3\} + 3\{1273^221\} + \{1273^3\} + \\
& \{127421^3\} + 12\{12742^21\} + 9\{127431^2\} + 17\{127432\} + 16\{1274^21\} + \\
& 11\{127521^2\} + 14\{12752^2\} + 24\{127531\} + 11\{12754\} + 2\{12761^3\} + 18\{127621\} + \\
& 16\{12763\} + 7\{127^21^2\} + 4\{127^22\} + 4\{1282^4\} + \{128321^3\} + 7\{12832^21\} + \\
& 5\{1283^21^2\} + 4\{1283^22\} + 8\{128421^2\} + 23\{12842^2\} + 20\{128431\} + 17\{1284^2\} + \\
& 4\{12851^3\} + 26\{128521\} + 17\{12853\} + 7\{12861^2\} + 25\{12862\} + 7\{12871\} + \\
& 5\{128^2\} + 4\{1292^31\} + 5\{129321^2\} + 9\{12932^2\} + 7\{1293^21\} + 2\{12941^3\} + \\
& 22\{129421\} + 16\{12943\} + 10\{12951^2\} + 19\{12952\} + 13\{12961\} + 3\{1297\} + \\
& \{12102^21^2\} + 7\{12102^3\} + \{121031^3\} + 10\{1210321\} + 3\{12103^2\} + 5\{121041^2\} + \\
& 20\{121042\} + 11\{121051\} + 9\{12106\} + 3\{12112^21\} + 3\{121131^2\} + 7\{121132\} + \\
& 7\{121141\} + 3\{12115\} + 4\{12^22^2\} + \{12^231\} + 5\{12^24\} + \{134^22^31\} + \{134^232^2\} + \\
& 2\{134^321\} + 3\{134^33\} + \{13532^31\} + \{13542^21^2\} + 3\{13542^3\} + 5\{1354321\} +
\end{aligned}$$

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$

See page 161 for Explanation of Tables

$$\begin{aligned}
& 2\{13543^2\} + 3\{1354^21^2\} + 8\{1354^22\} + \{135^221^3\} + 3\{135^22^21\} + 5\{135^231^2\} + \\
& 4\{135^232\} + 4\{135^241\} + \{1362^41\} + \{13632^21^2\} + 3\{13632^3\} + \{1363^21^3\} + \\
& 2\{1363^221\} + 10\{13642^21\} + 5\{136431^2\} + 13\{136432\} + 14\{1364^21\} + \\
& 6\{136521^2\} + 13\{13652^2\} + 14\{136531\} + 8\{13654\} + 10\{136^221\} + 11\{136^23\} + \\
& \{1372^21^2\} + 3\{1372^4\} + 7\{13732^21\} + 3\{1373^21^2\} + 5\{1373^22\} + 8\{137421^2\} + \\
& 16\{13742^2\} + 21\{137431\} + 12\{1374^2\} + 3\{13751^3\} + 22\{137521\} + 16\{13753\} + \\
& 8\{13761^2\} + 16\{13762\} + 5\{137^21\} + 4\{1382^31\} + 5\{138321^2\} + 12\{13832^2\} + \\
& 7\{1383^21\} + 2\{13841^3\} + 25\{138421\} + 19\{13843\} + 10\{13851^2\} + 23\{13852\} + \\
& 15\{13861\} + 4\{1387\} + 2\{1392^21^2\} + 6\{1392^3\} + \{13931^3\} + 13\{139321\} + \\
& 8\{1393^2\} + 10\{13941^2\} + 21\{13942\} + 14\{13951\} + 7\{1396\} + 6\{13102^21\} + \\
& 4\{131031^2\} + 12\{131032\} + 14\{131041\} + 8\{13105\} + 2\{131121^2\} + 4\{13112^2\} + \\
& 7\{131131\} + 4\{13114\} + 2\{131221\} + 4\{13123\} + \{13^21^2\} + \{1442^5\} + 3\{1442^23\} + \\
& \{1442321\} + 6\{14432\} + \{1452^41\} + \{14532^21^2\} + \{14532^3\} + \{1453^221\} + \\
& 5\{14542^21\} + 3\{145431^2\} + 7\{145432\} + 7\{1454^21\} + 4\{145^221^2\} + 2\{145^22^2\} + \\
& 6\{145^231\} + \{145^24\} + 4\{1462^4\} + 5\{14632^21\} + 2\{1463^21^2\} + 2\{1463^22\} + \\
& 4\{146421^2\} + 17\{14642^2\} + 13\{146431\} + 13\{1464^2\} + \{14651^3\} + 14\{146521\} + \\
& 10\{14653\} + \{146^21\} + 14\{146^22\} + 4\{1472^21\} + 4\{147321^2\} + 9\{14732^2\} + \\
& 7\{1473^21\} + \{14741^3\} + 21\{147421\} + 17\{14743\} + 10\{14751^2\} + 17\{14752\} + \\
& 11\{14761\} + \{1482^21^2\} + 9\{1482^3\} + \{14831^3\} + 14\{148321\} + 4\{1483^2\} + \\
& 7\{14841\} + 28\{14842\} + 15\{14851\} + 11\{1486\} + 7\{14921\} + 5\{14931\} + \\
& 14\{14932\} + 16\{14941\} + 8\{1495\} + \{141021\} + 10\{14102\} + 9\{141031\} + \\
& 12\{14104\} + 5\{141121\} + 5\{14113\} + 5\{14122\} + \{14131\} + \{14^2\} + \{1542^41\} + \\
& \{15432^3\} + 2\{1542^221\} + 3\{154^232\} + 4\{154^31\} + 2\{1552^4\} + 3\{15532^21\} + \\
& \{1553^21^2\} + \{1553^22\} + 2\{155421^2\} + 7\{15542^2\} + 8\{155431\} + 5\{1554^2\} + \\
& \{155^21^3\} + 5\{155^221\} + 2\{155^23\} + 3\{1562^31\} + 2\{156321^2\} + 8\{15632^2\} + \\
& 3\{1563^21\} + 15\{156421\} + 13\{15643\} + 4\{15651^2\} + 13\{15652\} + 7\{156^21\} + \\
& \{1572^21^2\} + 6\{1572^3\} + 11\{157321\} + 6\{1573^2\} + 8\{15741^2\} + 20\{15742\} + \\
& 12\{15751\} + 6\{1576\} + 7\{1582^21\} + 4\{15831^2\} + 15\{15832\} + 16\{15841\} + \\
& 9\{1585\} + 2\{15921^2\} + 8\{1592^2\} + 11\{15931\} + 9\{1594\} + 6\{151021\} + 8\{15103\} + \\
& \{15111^2\} + 4\{15112\} + 2\{15121\} + \{162^6\} + 2\{1642^4\} + \{16432^21\} + 5\{1642^22\} + \\
& 2\{16431\} + 6\{164^3\} + 2\{1652^31\} + \{165321^2\} + 3\{16532^2\} + 2\{1653^21\} + \\
& 8\{165421\} + 6\{16543\} + 3\{1652^12\} + 2\{165^22\} + 7\{1662^3\} + 7\{166321\} + \\
& 3\{1663^2\} + 3\{16641^2\} + 18\{16642\} + 7\{16651\} + 7\{166^2\} + 5\{1672^21\} + \\
& 4\{16731^2\} + 11\{16732\} + 14\{16741\} + 5\{1675\} + \{16821^2\} + 11\{1682^2\} + \\
& 9\{16831\} + 13\{1684\} + 6\{16921\} + 8\{1693\} + \{16101^2\} + 8\{16102\} + 2\{16111\} + \\
& 3\{1612\} + \{1732^4\} + \{1742^31\} + 2\{17432^2\} + 3\{1742^21\} + 4\{174^23\} + 3\{1752^3\} + \\
& 4\{175321\} + \{1753^2\} + 2\{17541^2\} + 8\{17542\} + 2\{175^21\} + 4\{1762^21\} + \{17631^2\} + \\
& 9\{17632\} + 10\{17641\} + 5\{1765\} + \{17721^2\} + 7\{1772^2\} + 8\{17731\} + 8\{1774\} + \\
& 6\{17821\} + 8\{1783\} + \{1791^2\} + 6\{1792\} + 3\{17101\} + \{1711\} + \{182^5\} + \\
& 3\{1842^3\} + \{184321\} + 6\{184^22\} + 2\{1852^21\} + \{18531^2\} + 4\{18532\} + 5\{18541\} + \\
& 7\{1862^2\} + 5\{18631\} + 9\{1864\} + 5\{18721\} + 6\{1873\} + 8\{1882\} + 3\{1891\} + \\
& 3\{1810\} + \{1932^3\} + \{1942^21\} + 2\{19432\} + 3\{194^21\} + 4\{1952^2\} + 3\{19531\} + \\
& 3\{1954\} + 3\{19621\} + 6\{1963\} + \{1971^2\} + 5\{1972\} + 3\{1981\} + 2\{199\} + \{202^4\} + \\
& 3\{2042^2\} + \{20431\} + 4\{204^2\} + 2\{20521\} + 2\{2053\} + 6\{2062\} + 2\{2071\} + \\
& 3\{208\} + \{2132^2\} + \{21421\} + 2\{2143\} + 3\{2152\} + 2\{2161\} + 2\{217\} + \{222^3\} + \\
& 3\{2242\} + \{2251\} + 3\{226\} + \{2332\} + \{2341\} + \{235\} + \{242^2\} + 2\{244\} + \{253\} + \\
& \{262\} + \{28\}.
\end{aligned}$$

$$\{n\} \otimes \{8\}$$

$$\begin{aligned}
\{2\} \otimes \{8\} = & \{2^8\} + \{42^6\} + \{4^22^4\} + \{4^32^2\} + \{4^4\} + \{62^5\} + \{642^3\} + \{64^22\} + \{6^22^2\} + \{6^24\} + \\
& \{82^4\} + \{842^2\} + \{84^2\} + \{862\} + \{8^2\} + \{102^3\} + \{1042\} + \{106\} + \{122^2\} + \\
& \{124\} + \{142\} + \{16\}.
\end{aligned}$$

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$

See page 161 for Explanation of Tables

$$\begin{aligned}
\{3\} \otimes \{8\} = & \{5^4 31\} + \{65^2 3^2 2\} + \{65^2 421^2\} + \{65^2 431\} + \{65^3 1^3\} + \{6^2 43^2 1^2\} + \{6^2 4^2 2^2\} + \\
& \{6^2 4^3\} + \{6^2 531^4\} + \{6^2 5321^2\} + \{6^2 5421\} + \{6^3 2^3\} + \{6^3 42\} + \{6^4\} + \{75432^2 1\} + \\
& \{754^2 2^2\} + \{754^2 31\} + \{75^2 2^2 1^3\} + \{75^2 321^2\} + \{75^2 3^2 1\} + \{75^2 41^3\} + \{75^2 421\} + \\
& \{75^2 43\} + \{75^3 1^2\} + \{763^2 21^3\} + \{7642^3 1\} + \{764321^2\} + \{76432^2\} + 2\{76421\} + \\
& \{764^2 3\} + \{7652^2 1^2\} + \{7652^3\} + \{76531^3\} + 2\{765321\} + \{76541^2\} + \{76542\} + \\
& \{76^2 2^2 1\} + \{76^2 32\} + \{76^2 41\} + \{7^2 32^2 1\} + \{7^2 42^2 1^2\} + \{7^2 4^2 3\} + \{7^2 4321\} + \\
& \{7^2 43^2\} + \{7^2 4^2 1^2\} + \{7^2 4^2 2\} + \{7^2 52^2 1\} + \{7^2 531^2\} + \{7^2 532\} + \{7^2 541\} + \\
& \{7^2 621^2\} + \{7^2 631\} + \{84^2 2^4\} + \{84^3 2^2\} + \{84^4\} + \{8532^3 1^2\} + \{8542^3 1\} + \\
& \{854321^2\} + \{85432^2\} + \{8543^2 1\} + 2\{854^2 21\} + \{854^2 3\} + \{85^2 2^2 1^2\} + \{85^2 31^3\} + \\
& 2\{85^2 321\} + \{85^2 3^2\} + 2\{85^2 41^2\} + \{85^2 42\} + \{862^5\} + \{8632^3 1\} + \{863^2 21^2\} + \\
& \{8642^2 1^2\} + 3\{8642^3\} + \{86431^3\} + 3\{864321\} + \{864^2 1^2\} + 4\{864^2 2\} + \{86521^3\} + \\
& 3\{8652^2 1\} + 2\{86531^2\} + 2\{86532\} + 2\{86541\} + 3\{86^2 2^2\} + \{86^2 31\} + 2\{86^2 4\} + \\
& \{872^4 1\} + \{8732^2 1^2\} + \{8732^3\} + \{873^2 21\} + 3\{8742^2 1\} + 2\{87431^2\} + 3\{87432\} + \\
& 2\{874^2 1\} + 2\{87521^2\} + 2\{8752^2\} + 3\{87531\} + \{8754\} + 2\{87621\} + \{8763\} + \\
& \{87^2 1^2\} + \{8^2 2^4\} + \{8^2 32^2 1\} + \{8^2 3^2 1^2\} + \{8^2 421^2\} + 3\{8^2 42^2\} + \{8^2 431\} + 2\{8^2 4^2\} + \\
& 2\{8^2 521\} + \{8^2 53\} + 2\{8^2 62\} + \{8^3\} + \{942^2 1\} + \{94^2 2^3 1\} + \{94^2 32^2\} + \{94^3 21\} + \\
& \{94^3 3\} + \{952^5\} + \{9532^3 1\} + \{953^2 21^2\} + \{9542^2 1^2\} + 2\{9542^3\} + 3\{954321\} + \\
& \{9543^2\} + \{954^2 1^2\} + 3\{954^2 2\} + \{9522^1\} + \{95^2 2^2 1\} + 3\{95^2 31^2\} + \{95^2 32\} + \\
& \{95^2 41\} + \{962^4 1\} + \{9632^2 1^2\} + 2\{9632^3\} + \{963^2 1^3\} + \{963^2 21\} + 5\{9642^2 1\} + \\
& 2\{96431^2\} + 4\{96432\} + 4\{964^2 1\} + 2\{96521^2\} + 4\{9652^2\} + 3\{96531\} + \{9654\} + \\
& 2\{96^2 21\} + 3\{96^2 3\} + 2\{972^4\} + 3\{9732^2 1\} + \{973^2 1^2\} + \{973^2 2\} + 2\{97421^2\} + \\
& 4\{9742^2\} + 5\{97431\} + 2\{974^2\} + \{9751^3\} + 4\{97521\} + 2\{9753\} + \{9761^2\} + \\
& 2\{9762\} + \{982^3 1\} + \{98321^2\} + 3\{9832^2\} + \{983^2 1\} + 4\{98421\} + 2\{9843\} + \\
& \{9851^2\} + 3\{9852\} + 2\{9861\} + \{9^2 2^3\} + \{9^2 321\} + \{9^2 3^2\} + \{9^2 41^2\} + \{9^2 42\} + \\
& \{102^7\} + \{1042^5\} + \{10432^3 1\} + 2\{1042^2 3\} + \{104^2 321\} + 3\{104^3 2\} + \{1052^4 1\} + \\
& \{10532^2 1^2\} + \{10532^3\} + \{1053^2 21\} + 3\{10542^2 1\} + 2\{105431^2\} + 3\{105432\} + \\
& 3\{1054^2 1\} + 2\{105^2 21^2\} + \{105^2 2^2\} + 2\{105^2 31\} + 3\{1062^4\} + 3\{10632^2 1\} + \\
& \{1063^2 1^2\} + \{1063^2 2\} + 2\{106421^2\} + 7\{10642^2\} + 4\{106431\} + 4\{1064^2\} + \\
& 4\{106521\} + 2\{10653\} + 4\{106^2 2\} + 2\{1072^3 1\} + \{107321^2\} + 3\{10732^2\} + \\
& 2\{1073^2 1\} + 6\{107421\} + 4\{10743\} + 2\{10751^2\} + 3\{10752\} + 2\{10761\} + \\
& 3\{1082^3\} + 3\{108321\} + \{1083^2\} + \{10841^2\} + 6\{10842\} + 2\{10851\} + 2\{1086\} + \\
& \{1092^2 1\} + 2\{10932\} + 2\{10941\} + \{1095\} + \{10^2 2^2\} + \{10^2 31\} + 2\{10^2 4\} + \\
& \{1132^5\} + \{1142^4 1\} + \{11432^3\} + 2\{1142^2 2^1\} + 2\{114^2 32\} + 2\{114^3 1\} + 2\{1152^4\} + \\
& 2\{11532^2 1\} + \{1153^2 1^2\} + \{115421^2\} + 4\{11542^2\} + 4\{115431\} + 2\{1154^2\} + \\
& \{115^2 1^3\} + 2\{115^2 21\} + 2\{1162^3 1\} + \{116321^2\} + 4\{11632^2\} + \{1163^2 1\} + \\
& 6\{116421\} + 5\{11643\} + \{11651^2\} + 4\{11652\} + 2\{116^2 1\} + 3\{1172^2\} + \\
& 4\{117321\} + \{1173^2\} + 2\{11741^2\} + 6\{11742\} + 3\{11751\} + \{1176\} + 2\{1182^2 1\} + \\
& \{11831^2\} + 4\{11832\} + 4\{11841\} + 2\{1185\} + 2\{1192^2\} + 2\{11931\} + \{1194\} + \\
& \{111021\} + \{11103\} + \{122^6\} + 2\{1242^4\} + \{12432^2 1\} + 3\{124^2 2^2\} + \{124^2 31\} + \\
& 3\{124^3\} + \{1252^3 1\} + \{125321^2\} + 2\{12532^2\} + \{1253^2 1\} + 4\{125421\} + 2\{12543\} + \\
& \{125^2 1^2\} + \{125^2 2\} + 4\{1262^3\} + 3\{126321\} + \{1263^2\} + \{12641^2\} + 7\{12642\} + \\
& 2\{12651\} + 3\{126^2\} + 2\{1272^2 1\} + \{12731^2\} + 4\{12732\} + 4\{12741\} + \{1275\} + \\
& 4\{1282^2\} + 2\{12831\} + 4\{1284\} + \{12921\} + 2\{1293\} + 2\{12102\} + \{12^2\} + \\
& \{1332^4\} + \{1342^3 1\} + \{13432^2\} + 2\{1342^2 1\} + 2\{134^2 3\} + 3\{1352^3\} + 2\{135321\} + \\
& \{13541^2\} + 4\{13542\} + 2\{1362^2 1\} + 4\{13632\} + 4\{13641\} + 2\{1365\} + 3\{1372^2\} + \\
& 3\{13731\} + 3\{1374\} + 2\{13821\} + 3\{1383\} + 2\{1392\} + \{13101\} + \{142^5\} + \\
& 2\{1442^3\} + \{144321\} + 3\{1442^2\} + \{1452^2 1\} + \{14531^2\} + 2\{14532\} + 2\{14541\} + \\
& 4\{1462^2\} + 2\{14631\} + 4\{1464\} + 2\{14721\} + 2\{1473\} + 3\{1482\} + \{1491\} + \\
& \{1410\} + \{1532^3\} + \{1542^2 1\} + \{15432\} + 2\{1542^1\} + 3\{1552^2\} + \{15531\} + \\
& \{1554\} + \{15621\} + 3\{1563\} + 3\{1572\} + \{1581\} + \{159\} + \{162^4\} + 2\{1642^2\} + \\
& \{16431\} + 2\{164^2\} + \{16521\} + \{1653\} + 3\{1662\} + \{1671\} + 2\{168\} + \{1732^2\} + \\
& \{17421\} + \{1743\} + 2\{1752\} + \{1761\} + \{177\} + \{182^3\} + 2\{1842\} + 2\{186\} + \\
& \{1932\} + \{1941\} + \{195\} + \{202^2\} + \{204\} + \{213\} + \{222\} + \{24\}.
\end{aligned}$$

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$
See page 161 for Explanation of Tables

$\{n\} \otimes \{9\}$

$$\begin{aligned} \{2\} \otimes \{9\} = & \{2^9\} + \{42^7\} + \{42^5\} + \{4^32^3\} + \{4^42\} + \{62^6\} + \{642^4\} + \{64^22^2\} + \{64^3\} + \{6^22^3\} + \\ & \{6^242\} + \{6^3\} + \{82^5\} + \{842^3\} + \{84^22\} + \{862^2\} + \{864\} + \{8^22\} + \{102^4\} + \\ & \{1042^2\} + \{104^2\} + \{1062\} + \{108\} + \{122^3\} + \{1242\} + \{126\} + \{142^2\} + \{144\} + \\ & \{162\} + \{18\}. \end{aligned}$$

$$\begin{aligned} \{3\} \otimes \{9\} = & \{5^52\} + \{65^3321\} + \{65^33^2\} + \{65^341^2\} + \{6^253^31\} + \{6^25431^3\} + \{6^254321\} + \\ & \{6^254^22\} + \{6^25^221^3\} + \{6^25^231^2\} + \{6^33^21^3\} + \{6^341^5\} + \{6^342^21\} + \{6^34^21\} + \\ & \{6^35^22\} + \{6^43\} + \{75^23^22^2\} + \{75^242^21^2\} + \{75^24321\} + \{75^243^2\} + \{75^24^21^2\} + \\ & \{75^321^3\} + \{75^331^2\} + \{75^332\} + \{75^341\} + \{7643^221^2\} + \{764^22^3\} + \{764^2321\} + \\ & \{764^32\} + \{765321^4\} + \{76532^21^2\} + \{7653^21^3\} + \{7653^221\} + \{765421^3\} + \\ & 2\{76542^21\} + 2\{765431^2\} + 2\{765432\} + \{7654^21\} + \{765^21^4\} + 2\{765^221^2\} + \\ & \{765^231\} + \{76^24^2\} + \{76^2321^3\} + \{76^232^21\} + \{76^23^21^2\} + \{76^2421^2\} + 2\{76^242^2\} + \\ & \{76^2431\} + \{76^24^2\} + \{76^2521\} + \{76^32\} + \{7^23^31^4\} + \{7^2432^21^2\} + \{7^2432^3\} + \\ & \{7^24^22^21\} + \{7^24^31^2\} + \{7^24^32\} + \{7^24^31\} + \{7^25^231^2\} + \{7^25321^3\} + 2\{7^2532^21\} + \\ & \{7^253^22\} + 2\{7^25421^2\} + \{7^254^22\} + 2\{75431\} + \{75^221\} + \{7^253\} + \{7^262^31\} + \\ & \{7^26321^2\} + \{7^2632^2\} + \{7^263^21\} + \{7^2641^3\} + 2\{7^26421\} + \{7^2643\} + \{7^2651^2\} + \\ & \{7^32^21^2\} + \{7^33^2\} + \{7^341^2\} + \{85432^21\} + \{854^22^3\} + \{854^2321\} + \{854^32\} + \\ & \{85^22^31^3\} + \{85^232^21^2\} + \{85^23^221\} + \{85^23^3\} + \{85^2421^3\} + \{85^242^21\} + \\ & 2\{85^2431^2\} + 2\{85^2432\} + \{85^24^21\} + 2\{85^321^2\} + 2\{85^31\} + \{863^22^21^3\} + \\ & \{8642^41\} + \{86432^21^2\} + \{86432^3\} + \{8643^21^3\} + \{8643^221\} + 3\{864^22^21\} + \\ & \{864^231^2\} + 2\{864^232\} + 2\{864^31\} + \{8652^31^2\} + \{8652^4\} + 2\{865321^3\} + \\ & 3\{86532^21\} + 3\{8653^21^2\} + \{8653^22\} + \{86541^4\} + 4\{865421^2\} + 4\{86542^2\} + \\ & 4\{865431\} + 2\{8654^2\} + 2\{865^21^3\} + 2\{865^221\} + 2\{86^231\} + \{86^231^4\} + \\ & 2\{86^2321^2\} + 3\{86^232^2\} + 4\{86^2421\} + 2\{86^243\} + 2\{86^252\} + \{86^31\} + \{8732^41\} + \\ & \{873^22^21^2\} + \{8742^31^2\} + 2\{8742^4\} + \{874321^3\} + 3\{87432^21\} + \{8743^21^2\} + \\ & \{8743^22\} + 2\{874^221^2\} + 4\{874^22^2\} + 3\{874^231\} + \{874^3\} + \{8752^21^3\} + \\ & 3\{8752^31\} + 4\{875321^2\} + 3\{87532^2\} + 3\{8753^21\} + 2\{87541^3\} + 6\{875421\} + \\ & 3\{87543\} + 2\{875^21^2\} + \{875^22\} + 2\{8762^21^2\} + 2\{8762^3\} + \{87631^3\} + \\ & 5\{876321\} + \{8763^2\} + 2\{87641^2\} + 4\{87642\} + 2\{87651\} + \{87^22^21\} + \\ & 2\{87^231^2\} + \{87^232\} + \{87^241\} + \{8^232^31\} + \{8^232^4\} + \{8^23^31^2\} + 2\{8^242^31\} + \\ & 2\{8^24321^2\} + 2\{8^2432^2\} + \{8^243^21\} + 3\{8^2421\} + 2\{8^24^23\} + \{8^252^21^2\} + 3\{8^252^3\} + \\ & 2\{8^2531^3\} + 4\{8^25321\} + 2\{8^2541^2\} + 4\{8^2542\} + 3\{8^262^21\} + \{8^2631^2\} + \\ & 3\{8^2632\} + 3\{8^2641\} + \{8^265\} + \{8^2721^2\} + 2\{8^272^2\} + \{8^2731\} + \{8^274\} + \{8^33\} + \\ & \{94^25\} + \{94^32^3\} + \{94^42\} + \{9532^41^2\} + \{95421\} + \{95432^21^2\} + \{95432^3\} + \\ & \{9543^221\} + 2\{954^221\} + \{954^31^2\} + 2\{954^232\} + \{954^31\} + \{95^22^31^2\} + \\ & \{95^2321^3\} + 2\{95^232^21\} + \{95^23^21^2\} + 2\{95^23^22\} + 3\{95^2421^2\} + \{95^242^2\} + \\ & 4\{95^2431\} + 2\{95^31^3\} + \{95^321\} + \{95^33\} + \{962^6\} + \{9632^21\} + \{963^22^21^2\} + \\ & \{963^31^3\} + \{9642^31^2\} + 3\{9642^4\} + \{964321^3\} + 4\{96432^21\} + 2\{9643^21^2\} + \\ & \{9643^22\} + 2\{964^221^2\} + 6\{964^22^2\} + 4\{964^231\} + 3\{964^3\} + \{9652^21^3\} + \\ & 3\{9652^31\} + \{96531^4\} + 6\{965321^2\} + 4\{96532^2\} + 3\{9653^21\} + 2\{96541^3\} + \\ & 8\{965421\} + 3\{96543\} + 2\{965^21^2\} + \{965^22\} + \{96^22^21^2\} + 5\{96^22^3\} + \{96^231^3\} + \\ & 4\{96^2321\} + \{96^23^2\} + 2\{96^241^2\} + 6\{96^242\} + \{96^251\} + 2\{96^3\} + \{972^51\} + \\ & \{9732^31^2\} + \{9732^4\} + \{973^221^3\} + 2\{973^22^21\} + 5\{9742^31\} + 4\{974321^2\} + \\ & 5\{97432^2\} + 3\{9743^21\} + \{974^21^3\} + 7\{974^221\} + 4\{974^23\} + 4\{9752^21^2\} + \\ & 4\{9752^3\} + 2\{97531^3\} + 9\{975321\} + 4\{9753^2\} + 6\{97541^2\} + 6\{97542\} + \\ & 2\{975^21\} + \{97621^3\} + 5\{9762^21\} + 4\{97631^2\} + 6\{97632\} + 5\{97641\} + \{9765\} + \\ & 2\{97^221^2\} + 3\{97^231\} + 2\{982^5\} + 2\{9832^21\} + 2\{983^221^2\} + \{983^22^2\} + \\ & 2\{9842^21^2\} + 5\{9842^3\} + \{98431^3\} + 7\{984321\} + \{9843^2\} + 2\{984^21^2\} + \\ & 6\{984^22\} + \{98521^3\} + 6\{9852^21\} + 5\{98531^2\} + 6\{98532\} + 5\{98541\} + \{985^2\} + \\ & 2\{98621^2\} + 6\{9862^2\} + 5\{98631\} + 4\{9864\} + 3\{98721\} + \{9873\} + 2\{98^22\} + \\ & \{9^232^21^2\} + 2\{9^232^3\} + \{9^23^221\} + \{9^23^3\} + 3\{9^242^21\} + 2\{9^2431^2\} + 3\{9^2432\} + \\ & 2\{9^24^21\} + 2\{9^2521^2\} + 2\{9^252^2\} + 4\{9^2531\} + \{9^261^3\} + 2\{9^2621\} + 2\{9^263\} + \\ & \{9^271^2\} + \{1042^61\} + \{104^241\} + \{104^232^3\} + \{104^23^21\} + \{104^332\} + \{104^41\} + \end{aligned}$$

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$
See page 161 for Explanation of Tables

$$\begin{aligned}
& \{105^2\} + \{1053^21\} + \{1053^22^21^2\} + \{10542^31^2\} + 2\{10542^4\} + 3\{105432^21\} + \\
& \{10543^21^2\} + \{10543^22\} + \{105421^2\} + 4\{1054^22^2\} + 3\{1054^231\} + 2\{1054^3\} + \\
& \{105^22^21^3\} + \{105^22^31\} + 3\{105^232^21\} + \{105^232^2\} + 3\{105^23^21\} + 2\{105^241^3\} + \\
& 4\{105^2421\} + 2\{105^243\} + 2\{105^31^2\} + \{1062^51\} + \{10632^31^2\} + 2\{10632^4\} + \\
& \{1063^221^3\} + \{1063^22^21\} + \{1063^31^2\} + 5\{10642^31\} + 4\{1064321^2\} + 6\{106432^2\} + \\
& 2\{10643^21\} + 8\{1064^221\} + 5\{1064^23\} + 3\{10652^21^2\} + 5\{10652^3\} + 3\{106531^3\} + \\
& 9\{1065321\} + \{10653^2\} + 4\{106541^2\} + 7\{106542\} + \{1065^21\} + 5\{106^22^21\} + \\
& \{106^231^2\} + 6\{106^232\} + 5\{106^241\} + 2\{106^25\} + 2\{107^25\} + 4\{10732^31\} + \\
& 2\{1073^221^2\} + \{1073^22^2\} + \{1073^31\} + 3\{10742^21^2\} + 7\{10742^3\} + \{107431^3\} + \\
& 9\{1074321\} + 3\{10743^2\} + 4\{1074^21^2\} + 9\{1074^22\} + \{107521^3\} + 8\{10752^21\} + \\
& 7\{107531^2\} + 8\{107532\} + 7\{107541\} + 3\{107621^2\} + 6\{10762^2\} + 7\{107631\} + \\
& 4\{10764\} + \{107^21^3\} + 2\{107^221\} + \{107^23\} + 2\{108^241\} + \{10832^21^2\} + \\
& 4\{1083^2\} + \{1083^21^3\} + 3\{1083^221\} + 8\{10842^1\} + 4\{108431^2\} + 8\{108432\} + \\
& 7\{1084^21\} + 4\{108521^2\} + 9\{10852^2\} + 7\{108531\} + 4\{10854\} + 7\{108621\} + \\
& 6\{10863\} + \{10871^2\} + 3\{10872\} + \{108^21\} + 2\{1092^4\} + 3\{10932^21\} + \{1093^21^2\} + \\
& 2\{1093^22\} + 2\{109421^2\} + 6\{10942^2\} + 5\{109431\} + 3\{1094^2\} + 5\{109521\} + \\
& 3\{10953\} + \{10961^2\} + 4\{10962\} + \{10971\} + \{10^22^31\} + 2\{10^232^2\} + 3\{10^2421\} + \\
& 3\{10^243\} + 3\{10^252\} + 2\{10^261\} + 2\{10^27\} + \{112^8\} + \{1142^6\} + \{11432^1\} + \\
& 2\{114^22^4\} + \{114^232^21\} + 3\{114^32^2\} + \{114^331\} + 2\{114^4\} + \{1152^51\} + \{11532^31^2\} + \\
& \{1153^24\} + \{1153^22^21\} + 3\{11542^31\} + 2\{1154321^2\} + 3\{115432^2\} + 2\{11543^21\} + \\
& 5\{1154^221\} + 3\{1154^23\} + 2\{115^221^2\} + \{115^23\} + \{115^231^3\} + 4\{115^2321\} + \\
& 2\{115^23^2\} + 4\{115^241^2\} + 2\{115^242\} + 3\{1162^5\} + 3\{11632^31\} + 2\{1163^221^2\} + \\
& \{1163^22^2\} + 2\{11642^21^2\} + 8\{11642^3\} + \{116431^3\} + 8\{1164321\} + 2\{11643^2\} + \\
& 3\{1164^21^2\} + 10\{1164^22\} + \{116521^3\} + 7\{11652^21\} + 5\{116531^2\} + 7\{116532\} + \\
& 6\{116541\} + \{116^221^2\} + 7\{116^22^2\} + 4\{116^231\} + 5\{116^24\} + 2\{1172^41\} + \\
& 2\{11732^21^2\} + 4\{11732^3\} + 3\{1173^221\} + 9\{11742^21\} + 5\{117431^2\} + 10\{117432\} + \\
& 7\{1174^21\} + 5\{117521^2\} + 7\{11752^2\} + 10\{117531\} + 4\{11754\} + 7\{117621\} + \\
& 5\{11763\} + 2\{117^21^2\} + \{117^22\} + 4\{1182^4\} + 5\{11832^21\} + 2\{1183^21^2\} + \\
& 2\{1183^22\} + 3\{118421^2\} + 11\{11842\} + 9\{118431\} + 6\{1184^2\} + \{11851^3\} + \\
& 9\{118521\} + 6\{11853\} + 2\{11861^2\} + 8\{11862\} + 2\{11871\} + 2\{118^2\} + \\
& 2\{1192^31\} + \{119321^2\} + 4\{11932^2\} + 3\{1193^21\} + 7\{119421\} + 5\{11943\} + \\
& 3\{11951^2\} + 5\{11952\} + 3\{11961\} + 2\{11102^3\} + 3\{1110321\} + \{11103^2\} + \\
& \{111041^2\} + 5\{111042\} + 3\{111051\} + \{11106\} + \{11231^2\} + \{11232\} + \{11241\} + \\
& \{1232^6\} + \{1242^51\} + \{12432^4\} + 2\{124^22^31\} + 2\{124^232^2\} + 2\{124^321\} + 2\{124^33\} + \\
& 2\{1252^5\} + 2\{12532^31\} + \{1253^221^2\} + \{12542^21^2\} + 4\{12542^3\} + 5\{1254321\} + \\
& \{12543^2\} + \{1254^21^2\} + 6\{1254^22\} + \{125^221^3\} + 2\{125^22^21\} + 4\{125^231^2\} + \\
& 2\{125^232\} + 2\{125^241\} + 2\{1262^41\} + \{12632^21^2\} + 4\{12632^3\} + \{1263^21^3\} + \\
& 2\{1263^221\} + 8\{12642^21\} + 3\{126431^2\} + 8\{126432\} + 8\{1264^21\} + 3\{126521^2\} + \\
& 8\{12652^2\} + 6\{126531\} + 3\{12654\} + 4\{126^221\} + 6\{126^23\} + 4\{1272^4\} + \\
& 5\{12732^21\} + 2\{1273^21^2\} + 2\{1273^22\} + 3\{127421^2\} + 10\{12742^2\} + 9\{127431\} + \\
& 6\{1274^2\} + \{12751^3\} + 9\{127521\} + 5\{12753\} + 2\{12761^2\} + 6\{12762\} + \{127^21\} + \\
& 2\{1282^31\} + 2\{128321^2\} + 7\{12832^2\} + 2\{1283^21\} + 10\{128421\} + 7\{12843\} + \\
& 2\{12851^2\} + 9\{12852\} + 5\{12861\} + \{1287\} + 4\{1292^3\} + 4\{129321\} + 2\{1293^2\} + \\
& 2\{12941^2\} + 8\{12942\} + 3\{12951\} + 3\{1296\} + 2\{12102^21\} + 4\{121032\} + \\
& 4\{121041\} + 3\{12105\} + 2\{12112^2\} + \{121131\} + \{12114\} + 2\{1223\} + \{132^7\} + \\
& 2\{1342^5\} + \{13432^31\} + 3\{1342^23\} + \{134^2321\} + 4\{134^32\} + \{1352^41\} + \\
& \{13532^21^2\} + 2\{13532^3\} + \{1353^221\} + 4\{13542^21\} + 2\{135431^2\} + 4\{135432\} + \\
& 4\{1354^21\} + 2\{135^221^2\} + 2\{135^22^2\} + 3\{135^231\} + 4\{1362^4\} + 4\{13632^21\} + \\
& \{1363^21^2\} + \{1363^22\} + 2\{136421^2\} + 10\{13642^2\} + 6\{136431\} + 6\{1364^2\} + \\
& 6\{136521\} + 4\{13653\} + 6\{136^22\} + 3\{1372^31\} + \{137321^2\} + 5\{13732^2\} + \\
& 3\{1373^21\} + 9\{137421\} + 7\{13743\} + 3\{13751^2\} + 6\{13752\} + 4\{13761\} + \\
& 5\{1382^3\} + 5\{138321\} + 2\{1383^2\} + 2\{13841^2\} + 11\{13842\} + 5\{13851\} + \\
& 4\{1386\} + 2\{1392^21\} + \{13931^2\} + 5\{13932\} + 5\{13941\} + 2\{1395\} + 3\{13102^2\} + \\
& 3\{131031\} + 4\{13104\} + \{131121\} + \{13113\} + \{13122\} + \{1432^5\} + \{1442^41\} +
\end{aligned}$$

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$

See page 161 for Explanation of Tables

$$\begin{aligned}
& \{14432^3\} + 2\{144^221\} + 2\{144^232\} + 2\{144^31\} + 3\{1452^4\} + 2\{14532^21\} + \\
& \{1453^21^2\} + \{145421^2\} + 5\{14542^2\} + 4\{145431\} + 3\{1454^2\} + \{145^21^3\} + \\
& 2\{145^221\} + 2\{1462^21\} + \{146321^2\} + 5\{14632^2\} + \{1463^21\} + 7\{146421\} + \\
& 6\{14643\} + \{14651^2\} + 6\{14652\} + 3\{146^21\} + 4\{1472^3\} + 5\{147321\} + \{1473^2\} + \\
& 2\{14741^2\} + 9\{14742\} + 4\{14751\} + 2\{1476\} + 3\{1482^21\} + \{14831^2\} + 6\{14832\} + \\
& 6\{14841\} + 4\{1485\} + 4\{1492^2\} + 3\{14931\} + 4\{1494\} + 2\{141021\} + 3\{14103\} + \\
& 2\{14112\} + \{14121\} + \{152^6\} + 2\{1542^4\} + \{15432^21\} + 3\{154^22^2\} + \{154^231\} + \\
& 3\{154^3\} + \{1552^31\} + \{155321^2\} + 2\{15532^2\} + \{1553^21\} + 4\{155421\} + 2\{15543\} + \\
& \{1552^12\} + \{155^22\} + 5\{1562^3\} + 3\{156321\} + \{1563^2\} + \{15641^2\} + 8\{15642\} + \\
& 2\{15651\} + 4\{156^2\} + 2\{1572^21\} + \{15731^2\} + 5\{15732\} + 5\{15741\} + 2\{1575\} + \\
& 5\{1582^2\} + 3\{15831\} + 5\{1584\} + 2\{15921\} + 3\{1593\} + 3\{15102\} + \{1512\} + \\
& \{1632^4\} + \{1642^31\} + \{16432^2\} + 2\{164221\} + 2\{164^23\} + 3\{1652^3\} + 2\{165321\} + \\
& \{16541^2\} + 4\{16542\} + 2\{1662^21\} + 4\{16632\} + 4\{16641\} + 2\{1665\} + 4\{1672^2\} + \\
& 3\{16731\} + 4\{1674\} + 2\{16821\} + 4\{1683\} + 3\{1692\} + 2\{16101\} + \{1611\} + \\
& \{172^5\} + 2\{1742^3\} + \{174321\} + 3\{1742^2\} + \{1752^21\} + \{17531^2\} + 2\{17532\} + \\
& 2\{17541\} + 4\{1762^2\} + 2\{17631\} + 4\{1764\} + 2\{17721\} + 2\{1773\} + 4\{1782\} + \\
& \{1791\} + \{1710\} + \{1832^3\} + \{1842^21\} + \{18432\} + 2\{18421\} + 3\{1852^2\} + \\
& \{18531\} + \{1854\} + \{18621\} + 3\{1863\} + 3\{1872\} + \{1881\} + 2\{189\} + \{192^4\} + \\
& 2\{1942^2\} + \{19431\} + 2\{194^2\} + \{19521\} + \{1953\} + 3\{1962\} + \{1971\} + 2\{198\} + \\
& \{2032^2\} + \{20421\} + \{2043\} + 2\{2052\} + \{2061\} + \{207\} + \{212^2\} + 2\{2142\} + \\
& 2\{216\} + \{2232\} + \{2241\} + \{225\} + \{232^2\} + \{234\} + \{243\} + \{252\} + \{27\}.
\end{aligned}$$

 $\{n\} \otimes \{10\}$

$$\begin{aligned}
\{2\} \otimes \{10\} = & \{2^{10}\} + \{42^8\} + \{4^22^6\} + \{4^32^4\} + \{4^42^2\} + \{4^5\} + \{62^7\} + \{642^5\} + \{64^22^3\} + \\
& \{64^32\} + \{6^22^4\} + \{6^242^2\} + \{6^24^2\} + \{6^32\} + \{82^6\} + \{842^4\} + \{84^22^2\} + \{84^3\} + \\
& \{862^3\} + \{8642\} + \{86^2\} + \{8^22^2\} + \{8^24\} + \{102^5\} + \{1042^3\} + \{104^22\} + \{1062^2\} + \\
& \{1064\} + \{1082\} + \{10^2\} + \{122^4\} + \{1242^2\} + \{124^2\} + \{1262\} + \{128\} + \{142^3\} + \\
& \{1442\} + \{146\} + \{162^2\} + \{164\} + \{182\} + \{20\}.
\end{aligned}$$

 $\{n\} \otimes \{11\}$

$$\begin{aligned}
\{2\} \otimes \{11\} = & \{2^{11}\} + \{42^9\} + \{4^22^7\} + \{4^32^5\} + \{4^42^3\} + \{4^52\} + \{62^8\} + \{642^6\} + \{64^22^4\} + \\
& \{64^32^2\} + \{64^4\} + \{6^22^5\} + \{6^242^3\} + \{6^24^22\} + \{6^32^2\} + \{6^34\} + \{82^7\} + \{842^5\} + \\
& \{84^22^3\} + \{84^32\} + \{862^4\} + \{8642^2\} + \{864^2\} + \{86^22\} + \{8^22^3\} + \{8^242\} + \{8^26\} + \\
& \{102^6\} + \{1042^4\} + \{104^22^2\} + \{104^3\} + \{1062^3\} + \{10642\} + \{106^2\} + \{1082^2\} + \\
& \{1084\} + \{10^22\} + \{122^5\} + \{1242^3\} + \{124^22\} + \{1262^2\} + \{1264\} + \{1282\} + \\
& \{1210\} + \{142^4\} + \{1442^2\} + \{144^2\} + \{1462\} + \{148\} + \{162^3\} + \{1642\} + \{166\} + \\
& \{182^2\} + \{184\} + \{202\} + \{22\}.
\end{aligned}$$

 $\{n\} \otimes \{12\}$

$$\begin{aligned}
\{2\} \otimes \{12\} = & \{2^{12}\} + \{42^{10}\} + \{4^22^8\} + \{4^32^6\} + \{4^42^4\} + \{4^52^2\} + \{4^6\} + \{62^9\} + \{642^7\} + \\
& \{64^22^5\} + \{64^32^3\} + \{64^42\} + \{6^22^6\} + \{6^242^4\} + \{6^24^22^2\} + \{6^24^3\} + \{6^32^3\} + \\
& \{6^342\} + \{6^4\} + \{82^8\} + \{842^6\} + \{84^22^4\} + \{84^32^2\} + \{84^4\} + \{862^5\} + \{8642^3\} + \\
& \{864^22\} + \{86^22^2\} + \{86^24\} + \{8^22^4\} + \{8^242^2\} + \{8^24^2\} + \{8^262\} + \{8^3\} + \{102^7\} + \\
& \{1042^5\} + \{104^22^3\} + \{104^32\} + \{1062^4\} + \{10642^2\} + \{1064^2\} + \{106^22\} + \{1082^3\} + \\
& \{10842\} + \{1086\} + \{10^22^2\} + \{10^24\} + \{122^6\} + \{1242^4\} + \{124^22^2\} + \{124^3\} + \\
& \{1262^3\} + \{12642\} + \{126^2\} + \{1282^2\} + \{1284\} + \{12102\} + \{12^2\} + \{142^5\} + \\
& \{1442^3\} + \{144^22\} + \{1462^2\} + \{1464\} + \{1482\} + \{1410\} + \{162^4\} + \{1642^2\} +
\end{aligned}$$

TABLE I. Symmetric Outer Plethysms $\{n\} \otimes \{m\}$
See page 161 for Explanation of Tables

$$\{164^2\} + \{1662\} + \{168\} + \{182^3\} + \{1842\} + \{186\} + \{202^2\} + \{204\} + \{222\} + \{24\}.$$

$\{n\} \otimes \{13\}$

$$\begin{aligned} \{2\} \otimes \{13\} = & \{2^{13}\} + \{42^{11}\} + \{4^22^9\} + \{4^32^7\} + \{4^42^5\} + \{4^52^3\} + \{4^62\} + \{62^{10}\} + \{642^8\} + \\ & \{64^22^6\} + \{64^32^4\} + \{64^42^2\} + \{64^5\} + \{6^22^7\} + \{6^242^5\} + \{6^24^22^3\} + \{6^24^32\} + \\ & \{6^32^4\} + \{6^342^2\} + \{6^42\} + \{82^9\} + \{842^7\} + \{84^22^5\} + \{84^32^3\} + \{84^42\} + \\ & \{862^6\} + \{8642^4\} + \{864^22^2\} + \{864^3\} + \{86^22^3\} + \{86^242\} + \{86^3\} + \{8^22^5\} + \\ & \{8^242^3\} + \{8^24^22\} + \{8^262^2\} + \{8^264\} + \{8^32\} + \{102^8\} + \{1042^6\} + \{104^22^4\} + \\ & \{104^32^2\} + \{104^4\} + \{1062^5\} + \{10642^3\} + \{10642^2\} + \{106^22^2\} + \{106^24\} + \{1082^4\} + \\ & \{10842^2\} + \{1084^2\} + \{10862\} + \{108^2\} + \{10^22^3\} + \{10^242\} + \{10^26\} + \{122^7\} + \\ & \{1242^5\} + \{124^22^3\} + \{124^32\} + \{1262^4\} + \{12642^2\} + \{126^22\} + \{1282^3\} + \\ & \{12842\} + \{1286\} + \{12102^2\} + \{12104\} + \{12^22\} + \{142^6\} + \{1442^4\} + \{144^22^2\} + \\ & \{144^3\} + \{1462^3\} + \{14642\} + \{146^2\} + \{1482^2\} + \{1484\} + \{14102\} + \{1412\} + \\ & \{162^5\} + \{1642^3\} + \{164^22\} + \{1662^2\} + \{1664\} + \{1682\} + \{1610\} + \{182^4\} + \\ & \{1842^2\} + \{184^2\} + \{1862\} + \{188\} + \{202^3\} + \{2042\} + \{206\} + \{222^2\} + \{224\} + \\ & \{242\} + \{26\}. \end{aligned}$$

$\{n\} \otimes \{14\}$

$$\begin{aligned} \{2\} \otimes \{14\} = & \{2^{14}\} + \{42^{12}\} + \{4^22^{10}\} + \{4^32^8\} + \{4^42^6\} + \{4^52^4\} + \{4^62^2\} + \{4^7\} + \{62^{11}\} + \\ & \{642^9\} + \{64^22^7\} + \{64^32^5\} + \{64^42^3\} + \{64^52\} + \{6^22^8\} + \{6^242^6\} + \{6^24^22^4\} + \\ & \{6^24^32^2\} + \{6^24^4\} + \{6^32^5\} + \{6^342^3\} + \{6^34^22^2\} + \{6^42^2\} + \{6^44\} + \{82^{10}\} + \{842^8\} + \\ & \{84^22^6\} + \{84^32^4\} + \{84^42^2\} + \{84^5\} + \{862^7\} + \{8642^5\} + \{864^22^3\} + \{864^32\} + \\ & \{86^22^4\} + \{86^242^2\} + \{86^262\} + \{86^32\} + \{8^22^6\} + \{8^242^4\} + \{8^24^22^2\} + \{8^24^3\} + \\ & \{8^262^3\} + \{8^2642\} + \{8^26^2\} + \{8^32^2\} + \{8^34\} + \{102^9\} + \{1042^7\} + \{104^22^5\} + \\ & \{104^32^3\} + \{104^42\} + \{1062^6\} + \{10642^4\} + \{1064^22^2\} + \{1064^3\} + \{106^22^3\} + \\ & \{106^242\} + \{106^3\} + \{1082^5\} + \{10842^3\} + \{10842^2\} + \{10862^2\} + \{10864\} + \\ & \{108^22\} + \{10^22^4\} + \{10^242^2\} + \{10^262\} + \{10^28\} + \{122^8\} + \{1242^6\} + \\ & \{124^22^4\} + \{124^32^2\} + \{124^4\} + \{1262^5\} + \{12642^3\} + \{1264^22\} + \{126^22^2\} + \\ & \{126^24\} + \{1282^4\} + \{12842^2\} + \{12862\} + \{128^2\} + \{12102^3\} + \\ & \{121042\} + \{12106\} + \{12^22\} + \{12^24\} + \{142^7\} + \{1442^5\} + \{144^22^3\} + \{144^32\} + \\ & \{1462^4\} + \{14642^2\} + \{1464^2\} + \{146^22\} + \{1482^3\} + \{14842\} + \{1486\} + \{14102^2\} + \\ & \{14104\} + \{14122\} + \{14^2\} + \{162^6\} + \{1642^4\} + \{164^22^2\} + \{164^3\} + \{1662^3\} + \\ & \{16642\} + \{166^2\} + \{1682^2\} + \{1684\} + \{16102\} + \{1612\} + \{182^5\} + \{1842^3\} + \\ & \{184^22\} + \{1862^2\} + \{1864\} + \{1882\} + \{1810\} + \{202^4\} + \{2042^2\} + \{204^2\} + \\ & \{2062\} + \{208\} + \{222^3\} + \{2242\} + \{226\} + \{242^2\} + \{244\} + \{262\} + \{28\}. \end{aligned}$$

TABLE II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$
See page 161 for Explanation of Tables

$\{n\} \otimes \{1^2\}$

$\{2\} \otimes \{1^2\} = \{31\}.$
$\{3\} \otimes \{1^2\} = \{3^2\} + \{51\}.$
$\{4\} \otimes \{1^2\} = \{53\} + \{71\}.$
$\{5\} \otimes \{1^2\} = \{5^2\} + \{73\} + \{91\}.$
$\{6\} \otimes \{1^2\} = \{75\} + \{93\} + \{111\}.$
$\{7\} \otimes \{1^2\} = \{7^2\} + \{95\} + \{113\} + \{131\}.$
$\{8\} \otimes \{1^2\} = \{97\} + \{115\} + \{133\} + \{151\}.$
$\{9\} \otimes \{1^2\} = \{9^2\} + \{117\} + \{135\} + \{153\} + \{171\}.$
$\{10\} \otimes \{1^2\} = \{119\} + \{137\} + \{155\} + \{173\} + \{191\}.$
$\{11\} \otimes \{1^2\} = \{11^2\} + \{139\} + \{157\} + \{175\} + \{193\} + \{211\}.$
$\{12\} \otimes \{1^2\} = \{1311\} + \{159\} + \{177\} + \{195\} + \{213\} + \{231\}.$
$\{13\} \otimes \{1^2\} = \{13^2\} + \{1511\} + \{179\} + \{197\} + \{215\} + \{233\} + \{251\}.$
$\{14\} \otimes \{1^2\} = \{1513\} + \{1711\} + \{199\} + \{217\} + \{235\} + \{253\} + \{271\}.$

$\{n\} \otimes \{1^3\}$

$\{2\} \otimes \{1^3\} = \{3^2\} + \{41^2\}.$
$\{3\} \otimes \{1^3\} = \{3^3\} + \{531\} + \{63\} + \{71^2\}.$
$\{4\} \otimes \{1^3\} = \{5^22\} + \{63^2\} + \{741\} + \{75\} + \{831\} + \{93\} + \{101^2\}.$
$\{5\} \otimes \{1^3\} = \{5^3\} + \{753\} + \{7^21\} + \{852\} + \{93^2\} + \{951\} + \{96\} + \{1041\} + \{105\} + \{1131\} + \{123\} + \{131^2\}.$
$\{6\} \otimes \{1^3\} = \{7^24\} + \{85^2\} + \{963\} + \{972\} + \{9^2\} + \{1053\} + \{1071\} + \{1152\} + \{1161\} + \{117\} + \{123^2\} + \{1251\} + \{126\} + \{1341\} + \{135\} + \{1431\} + \{153\} + \{161^2\}.$
$\{7\} \otimes \{1^3\} = \{7^3\} + \{975\} + \{9^23\} + \{1074\} + \{115^2\} + \{1173\} + \{1182\} + \{1191\} + \{1263\} + \{1272\} + \{129\} + \{1353\} + 2\{1371\} + \{138\} + \{1452\} + \{1461\} + \{147\} + \{153^2\} + \{1551\} + \{156\} + \{1641\} + \{165\} + \{1731\} + \{183\} + \{191^2\}.$
$\{8\} \otimes \{1^3\} = \{9^26\} + \{107^2\} + \{1185\} + \{1194\} + \{112^2\} + \{1275\} + \{1293\} + \{1374\} + \{1383\} + \{1392\} + \{13101\} + \{1311\} + \{145^2\} + \{1473\} + \{1482\} + \{1491\} + \{1563\} + \{1572\} + \{1581\} + 2\{159\} + \{1653\} + 2\{1671\} + \{168\} + \{1752\} + \{1761\} + \{177\} + \{183^2\} + \{1851\} + \{186\} + \{1941\} + \{195\} + \{2031\} + \{213\} + \{221^2\}.$
$\{9\} \otimes \{1^3\} = \{9^3\} + \{1197\} + \{11^25\} + \{1296\} + \{137^2\} + \{1395\} + \{13104\} + \{13113\} + \{13^21\} + \{1485\} + \{1494\} + \{14112\} + \{1575\} + 2\{1593\} + \{15102\} + \{15111\} + \{1512\} + \{1674\} + \{1683\} + \{1692\} + \{16101\} + \{1611\} + \{175^2\} + \{1773\} + \{1782\} + 2\{1791\} + \{1710\} + \{1863\} + \{1872\} + \{1881\} + 2\{189\} + \{1953\} + 2\{1971\} + \{198\} + \{2052\} + \{2061\} + \{207\} + \{213^2\} + \{2151\} + \{216\} + \{2241\} + \{225\} + \{2331\} + \{243\} + \{251^2\}.$
$\{10\} \otimes \{1^3\} = \{11^28\} + \{129^2\} + \{13107\} + \{13116\} + \{13^24\} + \{1497\} + \{14115\} + \{1596\} + \{15105\} + \{15114\} + \{15123\} + \{15132\} + \{15^2\} + \{167^2\} + \{1695\} + \{16104\} + \{16113\} + \{16131\} + \{1785\} + \{1794\} + \{17103\} + 2\{17112\} + \{17121\} + \{1713\} + \{1875\} + 2\{1893\} + \{18102\} + \{18111\} + \{1812\} + \{1974\} + \{1983\} + \{1992\} +$

TABLE II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$
See page 161 for Explanation of Tables

$$\begin{aligned}
& 2\{19101\} + 2\{1911\} + \{205^2\} + \{2073\} + \{2082\} + 2\{2091\} + \{2010\} + \{2163\} + \\
& \{2172\} + \{2181\} + 2\{219\} + \{2253\} + 2\{2271\} + \{228\} + \{2352\} + \{2361\} + \\
& \{237\} + \{243^2\} + \{2451\} + \{246\} + \{2541\} + \{255\} + \{2631\} + \{273\} + \{281^2\} . \\
\{11\} \otimes \{1^3\} = & \{11^3\} + \{13119\} + \{13^27\} + \{14118\} + \{159^2\} + \{15117\} + \{15126\} + \{15135\} + \\
& \{15^23\} + \{16107\} + \{16116\} + \{16134\} + \{1797\} + 2\{17115\} + \{17124\} + \{17133\} + \\
& \{17142\} + \{17151\} + \{1896\} + \{18105\} + \{18114\} + \{18123\} + \{18132\} + \{1815\} + \\
& \{197^2\} + \{1995\} + \{19104\} + 2\{19113\} + \{19122\} + 2\{19131\} + \{1914\} + \{2085\} + \\
& \{2094\} + \{20103\} + 2\{20112\} + \{20121\} + \{2013\} + \{2175\} + 2\{2193\} + \{21102\} + \\
& 2\{21111\} + 2\{2112\} + \{2274\} + \{2283\} + \{2292\} + 2\{22101\} + 2\{2211\} + \{235^2\} + \\
& \{2373\} + \{2382\} + 2\{2391\} + \{2310\} + \{2463\} + \{2472\} + \{2481\} + 2\{249\} + \\
& \{2553\} + 2\{2571\} + \{258\} + \{2652\} + \{2661\} + \{267\} + \{273^2\} + \{2751\} + \{276\} + \\
& \{2841\} + \{285\} + \{2931\} + \{303\} + \{311^2\} . \\
\{12\} \otimes \{1^3\} = & \{13^210\} + \{1411^2\} + \{15129\} + \{15138\} + \{15^26\} + \{16119\} + \{16137\} + \{17118\} + \\
& \{17127\} + \{17136\} + \{17145\} + \{17154\} + \{17^22\} + \{189^2\} + \{18117\} + \{18126\} + \\
& \{18135\} + \{18153\} + \{19107\} + \{19116\} + \{19125\} + 2\{19134\} + \{19143\} + \\
& \{19152\} + \{19161\} + \{1917\} + \{2097\} + 2\{20115\} + \{20124\} + \{20133\} + \{20142\} + \\
& \{20151\} + \{2196\} + \{21105\} + \{21114\} + 2\{21123\} + 2\{21132\} + \{21141\} + \\
& 2\{2115\} + \{227^2\} + \{2295\} + \{22104\} + 2\{22113\} + \{22122\} + 2\{22131\} + \{2214\} + \\
& \{2385\} + \{2394\} + \{23103\} + 2\{23112\} + 2\{23121\} + 2\{2313\} + \{2475\} + 2\{2493\} + \\
& \{24102\} + 2\{24111\} + 2\{2412\} + \{2574\} + \{2583\} + \{2592\} + 2\{25101\} + 2\{2511\} + \\
& \{265^2\} + \{2673\} + \{2682\} + 2\{2691\} + \{2610\} + \{2763\} + \{2772\} + \{2781\} + \\
& 2\{279\} + \{2853\} + 2\{2871\} + \{288\} + \{2952\} + \{2961\} + \{297\} + \{303^2\} + \{3051\} + \\
& \{306\} + \{3141\} + \{315\} + \{3231\} + \{333\} + \{341^2\} . \\
\{13\} \otimes \{1^3\} = & \{13^3\} + \{151311\} + \{15^29\} + \{161310\} + \{1711^2\} + \{17139\} + \{17148\} + \{17157\} + \\
& \{17^25\} + \{18129\} + \{18138\} + \{18156\} + \{19119\} + 2\{19137\} + \{19146\} + \{19155\} + \\
& \{19164\} + \{19173\} + \{19^21\} + \{20118\} + \{20127\} + \{20136\} + \{20145\} + \{20154\} + \\
& \{20172\} + \{219^2\} + \{21117\} + \{21126\} + 2\{21135\} + \{21144\} + 2\{21153\} + \\
& \{21162\} + \{21171\} + \{2118\} + \{22107\} + \{22116\} + \{22125\} + 2\{22134\} + \{22143\} + \\
& \{22152\} + \{22161\} + \{2217\} + \{2397\} + 2\{23115\} + \{23124\} + 2\{23133\} + \\
& 2\{23142\} + 2\{23151\} + \{2316\} + \{2496\} + \{24105\} + \{24114\} + 2\{24123\} + \\
& 2\{24132\} + \{24141\} + 2\{2415\} + \{257^2\} + \{2595\} + \{25104\} + 2\{25113\} + \{25122\} + \\
& 3\{25131\} + 2\{2514\} + \{2685\} + \{2694\} + \{26103\} + 2\{26112\} + 2\{26121\} + \\
& 2\{2613\} + \{2775\} + 2\{2793\} + \{27102\} + 2\{27111\} + 2\{2712\} + \{2874\} + \{2883\} + \\
& \{2892\} + 2\{28101\} + 2\{2811\} + \{295^2\} + \{2973\} + \{2982\} + 2\{2991\} + \{2910\} + \\
& \{3063\} + \{3072\} + \{3081\} + 2\{309\} + \{3153\} + 2\{3171\} + \{318\} + \{3252\} + \\
& \{3261\} + \{327\} + \{333^2\} + \{3351\} + \{336\} + \{3441\} + \{345\} + \{3531\} + \{363\} + \\
& \{371^2\} . \\
\{14\} \otimes \{1^3\} = & \{15^212\} + \{1613^2\} + \{171411\} + \{171510\} + \{17^28\} + \{181311\} + \{18159\} + \\
& \{191310\} + \{19149\} + \{19158\} + \{19167\} + \{19176\} + \{19^24\} + \{2011^2\} + \{20139\} + \\
& \{20148\} + \{20157\} + \{20175\} + \{21129\} + \{21138\} + \{21147\} + 2\{21156\} + \\
& \{21165\} + \{21174\} + \{21183\} + \{21192\} + \{21^2\} + \{22119\} + 2\{22137\} + \{22146\} + \\
& \{22155\} + \{22164\} + \{22173\} + \{22191\} + \{23118\} + \{23127\} + \{23136\} + \\
& 2\{23145\} + 2\{23154\} + \{23163\} + 2\{23172\} + \{23181\} + \{2319\} + \{249^2\} + \\
& \{24117\} + \{24126\} + 2\{24135\} + \{24144\} + 2\{24153\} + \{24162\} + \{24171\} + \\
& \{2418\} + \{25107\} + \{25116\} + \{25125\} + 2\{25134\} + 2\{25143\} + 2\{25152\} + \\
& 2\{25161\} + 2\{2517\} + \{2697\} + 2\{26115\} + \{26124\} + 2\{26133\} + 2\{26142\} + \\
& 2\{26151\} + \{2616\} + \{2796\} + \{27105\} + \{27114\} + 2\{27123\} + 2\{27132\} + \\
& 2\{27141\} + 3\{2715\} + \{287^2\} + \{2895\} + \{28104\} + 2\{28113\} + \{28122\} + \\
& 3\{28131\} + 2\{2814\} + \{2985\} + \{2994\} + \{29103\} + 2\{29112\} + 2\{29121\} + \\
& 2\{2913\} + \{3075\} + 2\{3093\} + \{30102\} + 2\{30111\} + 2\{3012\} + \{3174\} + \{3183\} + \\
& \{3192\} + 2\{31101\} + 2\{3111\} + \{325^2\} + \{3273\} + \{3282\} + 2\{3291\} + \{3210\} + \\
& \{3363\} + \{3372\} + \{3381\} + 2\{339\} + \{3453\} + 2\{3471\} + \{348\} + \{3552\} +
\end{aligned}$$

TABLE II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$
See page 161 for Explanation of Tables

$$\{3561\} + \{357\} + \{363^2\} + \{3651\} + \{366\} + \{3741\} + \{375\} + \{3831\} + \{393\} + \{401^2\}.$$

$$\{n\} \otimes \{1^4\}$$

$\{2\} \otimes \{1^4\} = \{431\} + \{51^3\}.$
$\{3\} \otimes \{1^4\} = \{3^4\} + \{53^21\} + \{5^21^2\} + \{63^2\} + \{642\} + \{6^2\} + \{731^2\} + \{741\} + \{831\} + \{91^3\}.$
$\{4\} \otimes \{1^4\} = \{5^31\} + \{6532\} + \{73^3\} + \{7531\} + \{754\} + \{763\} + \{7^21^2\} + \{8431\} + \{8521\} + \{853\} + \{862\} + \{871\} + \{93^21\} + \{943\} + \{951^2\} + \{952\} + \{961\} + \{103^2\} + \{1041^2\} + \{1042\} + \{1051\} + \{106\} + \{1131^2\} + \{1141\} + \{1231\} + \{131^3\}.$
$\{5\} \otimes \{1^4\} = \{5^4\} + \{75^23\} + \{7^251\} + \{85^22\} + \{8642\} + \{8741\} + \{875\} + \{8^22^2\} + \{953^2\} + 2\{95^21\} + \{9632\} + \{965\} + 2\{9731\} + \{974\} + \{983\} + \{9^21^2\} + \{10532\} + \{10541\} + \{105^2\} + \{10631\} + 2\{1064\} + \{10721\} + 2\{1073\} + 2\{1082\} + \{1091\} + \{10^2\} + \{113^3\} + 2\{11531\} + \{1154\} + \{11621\} + 2\{1163\} + 2\{1171^2\} + \{1172\} + \{1181\} + \{12431\} + \{12521\} + 2\{1253\} + 2\{1262\} + 2\{1271\} + \{128\} + \{133^21\} + \{1343\} + 2\{1351^2\} + \{1352\} + 2\{1361\} + \{143^2\} + \{1441^2\} + \{1442\} + \{1451\} + \{146\} + \{1531^2\} + \{1541\} + \{1631\} + \{171^3\}.$
$\{6\} \otimes \{1^4\} = \{7^33\} + \{8754\} + \{95^3\} + \{9753\} + \{9762\} + \{97^21\} + \{9852\} + \{9^23^2\} + \{9^251\} + \{9^26\} + \{10653\} + \{10743\} + \{10752\} + \{10761\} + \{107^2\} + \{10842\} + \{10851\} + \{1086\} + \{10932\} + \{10941\} + \{1095\} + \{10^24\} + \{115^23\} + \{11652\} + \{1173^2\} + \{11742\} + 3\{11751\} + \{1176\} + \{11832\} + \{11841\} + 2\{1185\} + 2\{11931\} + 2\{1194\} + \{111021\} + \{11103\} + \{112^21\} + \{125^22\} + \{1263^2\} + \{12642\} + \{12651\} + \{126^2\} + \{12732\} + 2\{12741\} + 3\{1275\} + \{1282^2\} + 2\{12831\} + 2\{1284\} + \{12921\} + 3\{1293\} + 2\{12102\} + \{12111\} + \{12^2\} + \{1353^2\} + 2\{135^21\} + \{13632\} + \{13641\} + 2\{1365\} + 3\{13731\} + 3\{1374\} + \{13821\} + 3\{1383\} + 2\{1391^2\} + 2\{1392\} + 2\{13101\} + \{14532\} + \{14541\} + \{145^2\} + 2\{14631\} + 2\{1464\} + 2\{14721\} + 3\{1473\} + \{1481^2\} + 3\{1482\} + 2\{1491\} + \{1410\} + \{153^3\} + 2\{15531\} + \{1554\} + \{15621\} + 3\{1563\} + 2\{1571^2\} + 2\{1572\} + 2\{1581\} + \{159\} + \{16431\} + \{16521\} + 2\{1653\} + \{1661^2\} + 2\{1662\} + 3\{1671\} + \{168\} + \{173^21\} + \{1743\} + 2\{1751^2\} + \{1752\} + 2\{1761\} + \{183^2\} + \{1841^2\} + \{1842\} + \{1851\} + \{186\} + \{1931^2\} + \{1941\} + \{2031\} + \{211^3\}.$
$\{7\} \otimes \{1^4\} = \{7^4\} + \{97^25\} + \{9^25^2\} + \{9^273\} + \{9^31\} + \{107^24\} + \{10864\} + \{10963\} + \{10972\} + \{10^24^2\} + \{1175^2\} + 2\{117^23\} + \{11854\} + \{11872\} + 2\{11953\} + \{11962\} + 2\{11971\} + \{1198\} + \{111052\} + \{111061\} + \{11107\} + \{11^23^2\} + 2\{11^251\} + \{12754\} + \{12763\} + \{127^22\} + \{12853\} + 2\{12862\} + \{12871\} + \{12943\} + 2\{12952\} + 2\{12961\} + 2\{1297\} + 2\{121042\} + \{121051\} + 2\{12106\} + \{121132\} + \{121141\} + 2\{12115\} + \{122^22\} + \{12^24\} + \{135^3\} + 2\{13753\} + \{13762\} + 3\{137^21\} + \{13843\} + 2\{13852\} + \{13861\} + 2\{1387\} + 2\{1393^2\} + \{13942\} + 4\{13951\} + 3\{1396\} + \{131032\} + 2\{131041\} + 3\{13105\} + 3\{131131\} + 2\{13114\} + 2\{13123\} + 2\{13^21^2\} + \{14653\} + \{14743\} + 2\{14752\} + 2\{14761\} + 2\{147^2\} + 2\{14842\} + 3\{14851\} + 3\{1486\} + 2\{14932\} + 3\{14941\} + 4\{1495\} + \{14102^2\} + 2\{141031\} + 4\{14104\} + 2\{141121\} + 3\{14113\} + 3\{14122\} + \{14131\} + \{14^2\} + \{155^23\} + \{15652\} + 2\{1573^2\} + \{15742\} + 4\{15751\} + 2\{1576\} + 2\{15832\} + 2\{15841\} + 4\{1585\} + 4\{15931\} + 4\{1594\} + 2\{151021\} + 4\{15103\} + 2\{15111^2\} + 2\{15112\} + 2\{15121\} + \{165^22\} + \{1663^2\} + \{16642\} + \{16651\} + \{166^2\} + \{16732\} + 3\{16741\} + 4\{1675\} + \{1682^2\} + 3\{16831\} + 4\{1684\} + 2\{16921\} + 5\{1693\} + \{16101^2\} + 4\{16102\} + 3\{16111\} + 2\{1612\} + \{1753^2\} + 2\{175^21\} + \{17632\} + \{17641\} + 2\{1765\} + 4\{17731\} + 3\{1774\} + 2\{17821\} + 4\{1783\} + 3\{1791^2\} + 3\{1792\} + 3\{17101\} + \{18532\} + \{18541\} + \{185^2\} + 2\{18631\} + 2\{1864\} + 2\{18721\} + 4\{1873\} + \{1881^2\} + 4\{1882\} + 3\{1891\} +$

TABLE II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$

See page 161 for Explanation of Tables

$$2\{1810\} + \{193^3\} + 2\{19531\} + \{1954\} + \{19621\} + 3\{1963\} + 3\{1971^2\} + \\ 2\{1972\} + 3\{1981\} + \{199\} + \{20431\} + \{20521\} + 2\{2053\} + \{2061^2\} + 2\{2062\} + \\ 3\{2071\} + \{208\} + \{213^21\} + \{2143\} + 2\{2151^2\} + \{2152\} + 2\{2161\} + \{223^2\} + \\ \{2241^2\} + \{2242\} + \{2251\} + \{226\} + \{2331^2\} + \{2341\} + \{2431\} + \{251^3\}.$$

$$\{8\} \otimes \{1^4\} = \{9^4\} + \{10976\} + \{117^3\} + \{11975\} + \{11984\} + \{119^23\} + \{111074\} + \{1125^2\} + \\ \{11273\} + \{11282\} + \{11291\} + \{12875\} + \{12965\} + \{12974\} + \{12983\} + \{129^22\} + \\ \{121064\} + \{121073\} + \{121082\} + \{121154\} + \{121163\} + \{121172\} + \{121181\} + \\ \{12119\} + \{12^262\} + \{137^25\} + \{13874\} + \{1395^2\} + \{13964\} + 3\{13973\} + \\ \{13982\} + 2\{139^21\} + \{131054\} + \{131063\} + 2\{131072\} + \{131081\} + \{13109\} + \\ 2\{131153\} + 2\{131162\} + 3\{131171\} + 2\{13118\} + \{131243\} + \{131252\} + \\ \{131261\} + 2\{13127\} + \{132^32\} + 2\{13251\} + \{1326\} + \{147^24\} + \{1485^2\} + \\ \{14864\} + \{14873\} + \{148^22\} + \{14954\} + 2\{14963\} + 3\{14972\} + 2\{14981\} + \\ \{149^2\} + \{14104^2\} + 2\{141053\} + 2\{141062\} + 3\{141071\} + 2\{14108\} + \{141143\} + \\ 3\{141152\} + 3\{141161\} + 3\{14117\} + 2\{141242\} + 2\{141251\} + 3\{14126\} + \\ \{141332\} + 2\{141341\} + 2\{14135\} + \{14^22^2\} + \{14^24\} + \{1575^2\} + 2\{157^23\} + \\ \{15854\} + \{15863\} + 2\{15872\} + 3\{15953\} + 3\{15962\} + 4\{15971\} + 3\{1598\} + \\ \{151043\} + 3\{151052\} + 3\{151061\} + 4\{15107\} + 2\{15113^2\} + 2\{151142\} + \\ 5\{151151\} + 4\{15116\} + 2\{151232\} + 2\{151241\} + 4\{15125\} + 3\{151331\} + \\ 3\{15134\} + \{151421\} + 2\{15143\} + \{15^21^2\} + \{16754\} + \{16763\} + \{167^22\} + \\ 2\{16853\} + 2\{16862\} + 3\{16871\} + \{168^2\} + 2\{16943\} + 3\{16952\} + 4\{16961\} + \\ 5\{1697\} + \{16103^2\} + 3\{161042\} + 4\{161051\} + 5\{16106\} + 2\{161132\} + \\ 4\{161141\} + 6\{16115\} + \{16122^2\} + 3\{161231\} + 5\{16124\} + 2\{161321\} + \\ 4\{16133\} + 3\{16142\} + 2\{16151\} + \{16^2\} + \{175^3\} + 2\{17753\} + \{17762\} + \\ 3\{177^21\} + \{17843\} + 3\{17852\} + 2\{17861\} + 3\{1787\} + 2\{1793^2\} + 2\{17942\} + \\ 6\{17951\} + 5\{1796\} + 2\{171032\} + 4\{171041\} + 6\{17105\} + \{17112^2\} + \\ 5\{171131\} + 5\{17114\} + 2\{171221\} + 5\{17123\} + 3\{17131^2\} + 3\{17132\} + \\ 2\{17141\} + \{18653\} + \{18743\} + 2\{18752\} + 2\{18761\} + 2\{187^2\} + \{1883^2\} + \\ 2\{18842\} + 4\{18851\} + 4\{1886\} + 3\{18932\} + 4\{18941\} + 6\{1895\} + \{18102^2\} + \\ 4\{181031\} + 6\{18104\} + 3\{181121\} + 6\{18113\} + \{18121^2\} + 5\{18122\} + \\ 3\{18131\} + 2\{1814\} + \{195^23\} + \{19652\} + 2\{1973^2\} + \{19742\} + 4\{19751\} + \\ 2\{1976\} + 2\{19832\} + 3\{19841\} + 5\{1985\} + 5\{19931\} + 6\{1994\} + 3\{191021\} + \\ 6\{19103\} + 3\{19111^2\} + 4\{19112\} + 4\{19121\} + \{1913\} + \{205^22\} + \{2063^2\} + \\ \{20642\} + \{20651\} + \{206^2\} + \{20732\} + 3\{20741\} + 4\{2075\} + \{2082^2\} + \\ 4\{20831\} + 4\{2084\} + 3\{20921\} + 6\{2093\} + 2\{20101^2\} + 5\{20102\} + 4\{20111\} + \\ 2\{2012\} + \{2153^2\} + 2\{215^21\} + \{21632\} + \{21641\} + 2\{2165\} + 4\{21731\} + \\ 3\{2174\} + 2\{21821\} + 5\{2183\} + 3\{2191^2\} + 4\{2192\} + 4\{21101\} + \{2111\} + \\ \{22532\} + \{22541\} + \{225^2\} + 2\{22631\} + 2\{2264\} + 2\{22721\} + 4\{2273\} + \\ 2\{2281^2\} + 4\{2282\} + 4\{2291\} + 2\{2210\} + \{233^3\} + 2\{23531\} + \{2354\} + \\ \{23621\} + 3\{2363\} + 3\{2371^2\} + 2\{2372\} + 3\{2381\} + \{239\} + \{24431\} + \\ \{24521\} + 2\{2453\} + \{2461^2\} + 2\{2462\} + 3\{2471\} + \{248\} + \{253^21\} + \{2543\} + \\ 2\{2551^2\} + \{2552\} + 2\{2561\} + \{263^2\} + \{2641^2\} + \{2642\} + \{2651\} + \{266\} + \\ \{2731^2\} + \{2741\} + \{2831\} + \{291^3\}.$$

$$\{9\} \otimes \{1^4\} = \{9^4\} + \{119^27\} + \{11^27^2\} + \{11^295\} + \{11^33\} + \{129^26\} + \{121086\} + \{121185\} + \\ \{121194\} + \{12^26^2\} + \{1397^2\} + 2\{139^25\} + \{131076\} + \{131094\} + 2\{131175\} + \\ \{131184\} + 2\{131193\} + \{1311102\} + \{131121^2\} + \{131274\} + \{131283\} + \{131292\} + \\ \{13^25^2\} + 2\{13^273\} + 2\{13291\} + \{13210\} + \{14976\} + \{14985\} + \{149^24\} + \\ \{141075\} + 2\{141084\} + \{141093\} + \{141165\} + 2\{141174\} + 2\{141183\} + \\ 2\{141192\} + \{1411101\} + \{14112^2\} + 2\{141264\} + \{141273\} + 2\{141282\} + \\ \{141291\} + \{141210\} + \{141354\} + \{141363\} + 2\{141372\} + 2\{141381\} + \{14139\} + \\ \{14^24^2\} + \{14^262\} + \{14^28\} + \{157^3\} + 2\{15975\} + \{15984\} + 3\{159^23\} + \{151065\} + \\ 2\{151074\} + \{151083\} + 2\{151092\} + 2\{15115^2\} + \{151164\} + 4\{151173\} + \\ 3\{151182\} + 4\{151191\} + \{151110\} + \{151254\} + 2\{151263\} + 3\{151272\} + \\ 2\{151281\} + 3\{15129\} + 3\{151353\} + 2\{151362\} + 4\{151371\} + 3\{15138\} +$$

TABLE II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$

See page 161 for Explanation of Tables

$$\begin{aligned}
& 2\{151452\} + 2\{151461\} + 2\{15147\} + 2\{15^23^2\} + 2\{15^251\} + \{15^26\} + \{16875\} + \\
& \{16965\} + 2\{16974\} + 2\{16983\} + 2\{169^22\} + 2\{161064\} + 3\{161073\} + \\
& 3\{161082\} + 2\{161091\} + \{1610^2\} + 2\{161154\} + 3\{161163\} + 4\{161172\} + \\
& 4\{161181\} + 4\{16119\} + \{16124^2\} + 2\{161253\} + 4\{161262\} + 4\{161271\} + \\
& 4\{16128\} + 2\{161343\} + 3\{161352\} + 4\{161361\} + 5\{16137\} + 3\{161442\} + \\
& 2\{161451\} + 4\{16146\} + \{161532\} + 2\{161541\} + 3\{16155\} + \{16^22^2\} + 2\{16^24\} + \\
& \{177^25\} + \{17874\} + 2\{1795^2\} + \{17964\} + 4\{17973\} + 2\{17982\} + 4\{179^21\} + \\
& 2\{171054\} + 2\{171063\} + 4\{171072\} + 3\{171081\} + 3\{17109\} + 4\{171153\} + \\
& 4\{171162\} + 7\{171171\} + 5\{17118\} + 2\{171243\} + 4\{171252\} + 4\{171261\} + \\
& 6\{17127\} + 2\{17133^2\} + 2\{171342\} + 7\{171351\} + 5\{17136\} + 2\{171432\} + \\
& 3\{171441\} + 5\{17145\} + 4\{171531\} + 3\{17154\} + \{171621\} + 2\{17163\} + 2\{17^21^2\} + \\
& \{187^24\} + \{1885^2\} + \{18864\} + \{18873\} + \{188^22\} + \{18954\} + 3\{18963\} + \\
& 4\{18972\} + 3\{18981\} + 3\{189^2\} + \{18104^2\} + 3\{181053\} + 4\{181062\} + \\
& 5\{181071\} + 5\{18108\} + 2\{181143\} + 5\{181152\} + 6\{181161\} + 7\{18117\} + \\
& \{18123^2\} + 4\{181242\} + 5\{181251\} + 8\{18126\} + 3\{181332\} + 5\{181341\} + \\
& 7\{18135\} + 2\{18142^2\} + 3\{181431\} + 6\{18144\} + 2\{181521\} + 5\{18153\} + \\
& 4\{18162\} + \{18171\} + 2\{18^2\} + \{1975^2\} + 2\{197^23\} + \{19854\} + \{19863\} + \\
& 2\{19872\} + 4\{19953\} + 3\{19962\} + 6\{19971\} + 4\{1998\} + 2\{191043\} + \\
& 4\{191052\} + 5\{191061\} + 7\{19107\} + 3\{19113^2\} + 3\{191142\} + 8\{191151\} + \\
& 7\{19116\} + 3\{191232\} + 5\{191241\} + 8\{19125\} + 6\{191331\} + 7\{19134\} + \\
& 3\{191421\} + 6\{19143\} + 3\{19151^2\} + 3\{19152\} + 3\{19161\} + \{20754\} + \{20763\} + \\
& \{207^22\} + 2\{20853\} + 2\{20862\} + 3\{20871\} + \{208^2\} + 2\{20943\} + 4\{20952\} + \\
& 5\{20961\} + 6\{2097\} + \{20103^2\} + 4\{201042\} + 6\{201051\} + 7\{20106\} + \\
& 3\{201132\} + 6\{201141\} + 9\{20115\} + 2\{20122^2\} + 5\{201231\} + 8\{20124\} + \\
& 4\{201321\} + 7\{20133\} + \{20141^2\} + 6\{20142\} + 4\{20151\} + 2\{2016\} + \{215^3\} + \\
& 2\{21753\} + \{21762\} + 3\{217^21\} + \{21843\} + 3\{21852\} + 2\{21861\} + 3\{2187\} + \\
& 3\{2193^2\} + 2\{21942\} + 7\{21951\} + 6\{2196\} + 3\{211032\} + 5\{211041\} + \\
& 8\{21105\} + \{21112^2\} + 7\{211131\} + 7\{21114\} + 3\{211221\} + 8\{21123\} + \\
& 4\{21131^2\} + 5\{21132\} + 4\{21141\} + \{2115\} + \{22653\} + \{22743\} + 2\{22752\} + \\
& 2\{22761\} + 2\{227^2\} + \{2283^2\} + 2\{22842\} + 4\{22851\} + 4\{2286\} + 3\{22932\} + \\
& 5\{22941\} + 7\{2295\} + \{22102^2\} + 5\{221031\} + 8\{22104\} + 4\{221121\} + 8\{22113\} + \\
& 2\{221212^2\} + 7\{22122\} + 5\{22131\} + 3\{2214\} + \{235^23\} + \{23652\} + 2\{2373^2\} + \\
& \{23742\} + 4\{23751\} + 2\{2376\} + 2\{23832\} + 3\{23841\} + 5\{2385\} + 6\{23931\} + \\
& 6\{2394\} + 4\{231021\} + 7\{23103\} + 4\{23111^2\} + 5\{23112\} + 5\{23121\} + \{2313\} + \\
& \{245^22\} + \{2463^2\} + \{24642\} + \{24651\} + \{246^2\} + \{24732\} + 3\{24741\} + \\
& 4\{2475\} + \{2482^2\} + 4\{24831\} + 4\{2484\} + 3\{24921\} + 7\{2493\} + 2\{24101^2\} + \\
& 6\{24102\} + 5\{24111\} + 3\{2412\} + \{2553^2\} + 2\{255^21\} + \{25632\} + \{25641\} + \\
& 2\{2565\} + 4\{25731\} + 3\{2574\} + 2\{25821\} + 5\{2583\} + 4\{2591^2\} + 4\{2592\} + \\
& 5\{25101\} + \{2511\} + \{26532\} + \{26541\} + \{265^2\} + 2\{26631\} + 2\{2664\} + \\
& 2\{26721\} + 4\{2673\} + 2\{2681^2\} + 4\{2682\} + 4\{2691\} + 2\{2610\} + \{273^3\} + \\
& 2\{27531\} + \{2754\} + \{27621\} + 3\{2763\} + 3\{2771^2\} + 2\{2772\} + 3\{2781\} + \\
& \{279\} + \{28431\} + \{28521\} + 2\{2853\} + \{2861^2\} + 2\{2862\} + 3\{2871\} + \{288\} + \\
& \{293^21\} + \{2943\} + 2\{2951^2\} + \{2952\} + 2\{2961\} + \{303^2\} + \{3041^2\} + \{3042\} + \\
& \{3051\} + \{306\} + \{3131^2\} + \{3141\} + \{3231\} + \{331^3\}. \\
\{10\} \otimes \{1^4\} = & \{11^37\} + \{121198\} + \{139^3\} + \{131197\} + \{1311106\} + \{1311^25\} + \{131296\} + \\
& \{13^27^2\} + \{13^295\} + \{13^2104\} + \{13^2113\} + \{13^31\} + \{141097\} + \{141187\} + \\
& \{141196\} + \{1411105\} + \{1411^24\} + \{141286\} + \{141295\} + \{1412104\} + \{141376\} + \\
& \{141385\} + \{141394\} + \{1413103\} + \{1413112\} + \{14^284\} + \{159^27\} + \{151096\} + \\
& \{15117^2\} + \{151186\} + 3\{151195\} + \{1511104\} + 2\{1511^23\} + \{151276\} + \\
& \{151285\} + 2\{151294\} + \{1512103\} + \{1512112\} + 2\{151375\} + 2\{151384\} + \\
& 3\{151393\} + 2\{1513102\} + 2\{1513111\} + \{151312\} + \{151465\} + \{151474\} + \\
& \{151483\} + 2\{151492\} + \{1514101\} + \{151411\} + \{15^25^2\} + 2\{15^273\} + \{15^282\} + \\
& 2\{15^291\} + \{15^210\} + \{169^26\} + \{16107^2\} + \{161086\} + \{161095\} + \{1610^24\} + \\
& \{161176\} + 2\{161185\} + 3\{161194\} + 2\{1611103\} + \{1611^22\} + \{16126^2\} +
\end{aligned}$$

TABLE II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$
See page 161 for Explanation of Tables

$$\begin{aligned}
& 2\{161275\} + 2\{161284\} + 3\{161293\} + 2\{1612102\} + \{1612111\} + \{161365\} + \\
& 3\{161374\} + 3\{161383\} + 3\{161392\} + 3\{1613101\} + 2\{161311\} + 2\{161464\} + \\
& 2\{161473\} + 3\{161482\} + 2\{161491\} + 2\{161410\} + \{161554\} + 2\{161563\} + \\
& 2\{161572\} + 2\{161581\} + 3\{16159\} + \{16^24^2\} + \{16^262\} + \{16^271\} + \{16^28\} + \\
& \{1797^2\} + 2\{17925\} + \{171076\} + \{171085\} + 2\{171094\} + 3\{171175\} + \\
& 3\{171184\} + 4\{171193\} + 3\{1711102\} + 3\{1711^21\} + \{171265\} + 3\{171274\} + \\
& 3\{171283\} + 4\{171292\} + 2\{1712101\} + 2\{171211\} + 2\{17135^2\} + 2\{171364\} + \\
& 5\{171373\} + 4\{171382\} + 6\{171391\} + 4\{171310\} + 2\{171454\} + 2\{171463\} + \\
& 4\{171472\} + 4\{171481\} + 4\{17149\} + 3\{171553\} + 3\{171562\} + 5\{171571\} + \\
& 4\{17158\} + \{171643\} + 2\{171652\} + 2\{171661\} + 3\{17167\} + \{17^23^2\} + 3\{17^251\} + \\
& \{17^26\} + \{18976\} + \{18985\} + \{189^24\} + 2\{181075\} + 2\{181084\} + 3\{181093\} + \\
& \{1810^22\} + 2\{181165\} + 3\{181174\} + 4\{181183\} + 5\{181192\} + 3\{1811101\} + \\
& 2\{1811^2\} + \{18125^2\} + 3\{181264\} + 4\{181273\} + 5\{181282\} + 5\{181291\} + \\
& 4\{181210\} + 2\{181354\} + 4\{181363\} + 6\{181372\} + 6\{181381\} + 6\{18139\} + \\
& \{18144^2\} + 3\{181453\} + 5\{181462\} + 5\{181471\} + 6\{18148\} + 2\{181543\} + \\
& 4\{181552\} + 5\{181561\} + 6\{18157\} + 3\{181642\} + 3\{181651\} + 5\{18166\} + \\
& 2\{181732\} + 2\{181741\} + 3\{18175\} + \{18^22^2\} + 2\{18^24\} + \{197^3\} + 2\{19975\} + \\
& \{19984\} + 3\{199^23\} + \{191065\} + 3\{191074\} + 2\{191083\} + 3\{191092\} + \\
& \{1910^21\} + 2\{19115^2\} + 2\{191164\} + 6\{191173\} + 5\{191182\} + 7\{191191\} + \\
& 4\{191110\} + 2\{191254\} + 4\{191263\} + 6\{191272\} + 5\{191281\} + 7\{19129\} + \\
& \{19134^2\} + 5\{191353\} + 5\{191362\} + 9\{191371\} + 8\{19138\} + 2\{191443\} + \\
& 5\{191452\} + 6\{191461\} + 8\{19147\} + 3\{19153^2\} + 3\{191542\} + 7\{191551\} + \\
& 7\{19156\} + 2\{191632\} + 4\{191641\} + 6\{19165\} + 4\{191731\} + 4\{19174\} + \\
& \{191821\} + 3\{19183\} + 2\{19^21^2\} + \{20875\} + \{20965\} + 2\{20974\} + 2\{20983\} + \\
& 2\{209^22\} + \{20105^2\} + 2\{201064\} + 4\{201073\} + 4\{201082\} + 4\{201091\} + \\
& 2\{2010^2\} + 3\{201154\} + 4\{201163\} + 6\{201172\} + 7\{201181\} + 7\{20119\} + \\
& \{20124^2\} + 4\{201253\} + 6\{201262\} + 8\{201271\} + 8\{20128\} + 3\{201343\} + \\
& 6\{201352\} + 8\{201361\} + 10\{20137\} + \{20143^2\} + 5\{201442\} + 7\{201451\} + \\
& 9\{20146\} + 3\{201532\} + 6\{201541\} + 9\{20155\} + 2\{20162^2\} + 4\{201631\} + \\
& 7\{20164\} + 3\{201721\} + 5\{20173\} + 4\{20182\} + 2\{20191\} + \{20^2\} + \{217^25\} + \\
& \{21874\} + 2\{2195^2\} + \{21964\} + 4\{21973\} + 2\{21982\} + 4\{219^21\} + 2\{211054\} + \\
& 3\{211063\} + 5\{211072\} + 4\{211081\} + 5\{21109\} + 5\{211153\} + 6\{211162\} + \\
& 9\{211171\} + 8\{21118\} + 3\{211243\} + 6\{211252\} + 7\{211261\} + 10\{21127\} + \\
& 3\{21133^2\} + 4\{211342\} + 10\{211351\} + 10\{21136\} + 4\{211432\} + 6\{211441\} + \\
& 10\{21145\} + \{21152^2\} + 7\{211531\} + 8\{21154\} + 3\{211621\} + 7\{21163\} + \\
& 3\{21171^2\} + 4\{21172\} + 3\{21181\} + \{227^24\} + \{2285^2\} + \{22864\} + \{22873\} + \\
& \{228^22\} + \{22954\} + 3\{22963\} + 4\{22972\} + 3\{22981\} + 3\{229^2\} + \{22104^2\} + \\
& 4\{221053\} + 4\{221062\} + 7\{221071\} + 6\{22108\} + 3\{221143\} + 6\{221152\} + \\
& 8\{221161\} + 10\{22117\} + 2\{22123^2\} + 5\{221242\} + 8\{221251\} + 11\{22126\} + \\
& 4\{221332\} + 8\{221341\} + 11\{22135\} + 2\{22142^2\} + 6\{221431\} + 10\{22144\} + \\
& 4\{221521\} + 9\{22153\} + 2\{22161^2\} + 7\{22162\} + 4\{22171\} + 3\{2218\} + \{2375^2\} + \\
& 2\{237^23\} + \{23854\} + \{23863\} + 2\{23872\} + 4\{23953\} + 3\{23962\} + 6\{23971\} + \\
& 4\{2398\} + 2\{231043\} + 5\{231052\} + 6\{231061\} + 8\{23107\} + 3\{23113^2\} + \\
& 4\{231142\} + 10\{231151\} + 9\{23116\} + 4\{231232\} + 7\{231241\} + 11\{23125\} + \\
& \{23132^2\} + 8\{231331\} + 10\{23134\} + 5\{231421\} + 9\{23143\} + 4\{23151^2\} + \\
& 6\{23152\} + 5\{23161\} + \{2317\} + \{24754\} + \{24763\} + \{247^22\} + 2\{24853\} + \\
& 2\{24862\} + 3\{24871\} + \{248^2\} + 2\{24943\} + 4\{24952\} + 5\{24961\} + 6\{2497\} + \\
& 2\{24103^2\} + 4\{241042\} + 7\{241051\} + 8\{24106\} + 4\{241132\} + 7\{241141\} + \\
& 11\{24115\} + 2\{24122^2\} + 7\{241231\} + 10\{24124\} + 5\{241321\} + 10\{24133\} + \\
& 2\{24141^2\} + 8\{24142\} + 6\{24151\} + 3\{2416\} + \{255^3\} + 2\{25753\} + \{25762\} + \\
& 3\{257^21\} + \{25843\} + 3\{25852\} + 2\{25861\} + 3\{2587\} + 3\{2593^2\} + 2\{25942\} + \\
& 7\{25951\} + 6\{2596\} + 3\{251032\} + 6\{251041\} + 9\{25105\} + \{25112^2\} + \\
& 8\{251131\} + 9\{25114\} + 4\{251221\} + 10\{25123\} + 5\{25131^2\} + 7\{25132\} + \\
& 6\{25141\} + 2\{2515\} + \{26653\} + \{26743\} + 2\{26752\} + 2\{26761\} + 2\{267^2\} +
\end{aligned}$$

TABLE II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$
See page 161 for Explanation of Tables

$$\begin{aligned}
 & \{2683^2\} + 2\{26842\} + 4\{26851\} + 4\{2686\} + 3\{26932\} + 5\{26941\} + 7\{2695\} + \\
 & \{26102^2\} + 6\{261031\} + 8\{26104\} + 5\{261121\} + 9\{26113\} + 3\{26121^2\} + \\
 & 8\{26122\} + 6\{26131\} + 3\{2614\} + \{275^3\} + \{27652\} + 2\{2773^2\} + \{27742\} + \\
 & 4\{27751\} + 2\{2776\} + 2\{27832\} + 3\{27841\} + 5\{2785\} + 6\{27931\} + 6\{2794\} + \\
 & 4\{271021\} + 8\{27103\} + 4\{27111^2\} + 6\{27112\} + 6\{27121\} + 2\{2713\} + \{285^22\} + \\
 & \{2863^2\} + \{28642\} + \{28651\} + \{286^2\} + \{28732\} + 3\{28741\} + 4\{2875\} + \\
 & \{2882^2\} + 4\{28831\} + 4\{2884\} + 3\{28921\} + 7\{2893\} + 3\{28101^2\} + 6\{28102\} + \\
 & 6\{28111\} + 3\{2812\} + \{2953^2\} + 2\{295^21\} + \{29632\} + \{29641\} + 2\{2965\} + \\
 & 4\{29731\} + 3\{2974\} + 2\{29821\} + 5\{2983\} + 4\{2991^2\} + 4\{2992\} + 5\{29101\} + \\
 & \{2911\} + \{30532\} + \{30541\} + \{305^2\} + 2\{30631\} + 2\{3064\} + 2\{30721\} + \\
 & 4\{3073\} + 2\{3081^2\} + 4\{3082\} + 4\{3091\} + 2\{3010\} + \{313^3\} + 2\{31531\} + \\
 & \{3154\} + \{31621\} + 3\{3163\} + 3\{3171^2\} + 2\{3172\} + 3\{3181\} + \{319\} + \{32431\} + \\
 & \{32521\} + 2\{3253\} + \{3261^2\} + 2\{3262\} + 3\{3271\} + \{328\} + \{333^21\} + \{3343\} + \\
 & 2\{3351^2\} + \{3352\} + 2\{3361\} + \{343^2\} + \{3441^2\} + \{3442\} + \{3451\} + \{346\} + \\
 & \{3531^2\} + \{3541\} + \{3631\} + \{371^3\}.
 \end{aligned}$$

$\{n\} \otimes \{1^5\}$

$$\{2\} \otimes \{1^5\} = \{4^22\} + \{531^2\} + \{61^4\}.$$

$$\begin{aligned}
 \{3\} \otimes \{1^5\} = & \{3^5\} + \{53^31\} + \{5^231^2\} + \{63^3\} + \{6432\} + \{6531\} + \{6^23\} + \{73^21^2\} + \{7431\} + \\
 & \{74^2\} + \{751^3\} + \{7521\} + \{762\} + \{83^21\} + \{8421\} + \{843\} + \{851^2\} + \{861\} + \\
 & \{931^3\} + \{941^2\} + \{942\} + \{1031^2\} + \{111^4\}.
 \end{aligned}$$

$$\begin{aligned}
 \{4\} \otimes \{1^5\} = & \{5^4\} + \{65^231\} + \{6^242^2\} + \{753^22\} + \{75^221\} + \{75^23\} + \{763^21\} + \{7643\} + \\
 & \{7652\} + \{7^23^2\} + \{7^241^2\} + \{7^251\} + \{83^4\} + \{853^21\} + \{85421\} + \{8543\} + \\
 & \{85^21^2\} + \{85^22\} + \{86321\} + \{863^2\} + 2\{8642\} + \{8651\} + \{86^2\} + \{8731^2\} + \\
 & \{8732\} + 2\{8741\} + \{875\} + \{8^22^2\} + \{8^231\} + \{8^24\} + \{943^21\} + \{95321\} + \\
 & 2\{953^2\} + \{9541^2\} + \{9542\} + 2\{95^21\} + \{9631^2\} + 2\{9632\} + 2\{9641\} + \{965\} + \\
 & \{9721^2\} + 3\{9731\} + \{974\} + \{9821\} + \{983\} + \{9^21^2\} + \{103^31\} + \{1043^2\} + \\
 & \{104^22\} + 2\{10531^2\} + 2\{10532\} + 2\{10541\} + \{1062^2\} + 3\{10631\} + 3\{1064\} + \\
 & \{1071^3\} + 2\{10721\} + 2\{1073\} + \{1081^2\} + 2\{1082\} + \{10^2\} + \{113^3\} + \{11431^2\} + \\
 & \{11432\} + \{114^21\} + \{11521^2\} + 3\{11531\} + \{1154\} + \{1161^3\} + 2\{11621\} + \\
 & 2\{1163\} + 2\{1171^2\} + \{1172\} + \{1181\} + \{123^21^2\} + 2\{12431\} + \{124^2\} + \{1251^3\} + \\
 & 2\{12521\} + \{1253\} + \{1261^2\} + 2\{1262\} + \{1271\} + \{133^21\} + \{1341^3\} + \{13421\} + \\
 & \{1343\} + 2\{1351^2\} + \{1361\} + \{1431^3\} + \{1441^2\} + \{1442\} + \{1531^2\} + \{161^4\}.
 \end{aligned}$$

$$\begin{aligned}
 \{5\} \otimes \{1^5\} = & \{5^5\} + \{75^33\} + \{7^253^2\} + \{7^25^21\} + \{7^331\} + \{85^32\} + \{86542\} + \{87532\} + \\
 & \{87541\} + \{875^2\} + \{87631\} + \{8764\} + \{87^23\} + \{8^24^21\} + \{8^252^2\} + \{8^254\} + \\
 & \{8^2621\} + \{8^272\} + \{95^23^2\} + 2\{95^31\} + \{96532\} + \{96541\} + \{965^2\} + \{96^22^2\} + \\
 & \{973^3\} + \{97432\} + 3\{97531\} + 2\{9754\} + \{97621\} + 2\{9763\} + 2\{97^21^2\} + \\
 & \{97^22\} + \{9842^2\} + \{98431\} + 2\{98521\} + 3\{9853\} + 2\{9862\} + \{9871\} + \\
 & 2\{9^23^21\} + \{9^243\} + 2\{9^251^2\} + \{9^252\} + \{9^261\} + \{105^232\} + \{105^241\} + 2\{105^3\} + \\
 & \{106432\} + \{10652^2\} + 2\{106531\} + 2\{10654\} + \{106^23\} + \{1073^22\} + 2\{107431\} + \\
 & \{1074^2\} + 3\{107521\} + 5\{10753\} + \{10761^2\} + 3\{10762\} + 2\{107^21\} + \{10832^2\} + \\
 & \{1083^21\} + 2\{108421\} + 3\{10843\} + \{10851^2\} + 5\{10852\} + 3\{10861\} + 2\{1087\} + \\
 & \{109321\} + 2\{1093^2\} + \{10941^2\} + 3\{10942\} + 4\{10951\} + 2\{1096\} + 2\{10^232\} + \\
 & 2\{10^241\} + 3\{10^25\} + \{1153^3\} + 3\{115^231\} + \{115^24\} + \{1163^22\} + \{11642^2\} + \\
 & \{116431\} + \{1164^2\} + 2\{116521\} + 4\{11653\} + 2\{116^22\} + 3\{1173^21\} + \\
 & 2\{117421\} + 4\{11743\} + 4\{11751^2\} + 5\{11752\} + 4\{11761\} + 2\{118321\} + \\
 & 3\{1183^2\} + 2\{11841^2\} + 5\{11842\} + 6\{11851\} + 3\{1186\} + 3\{11931^2\} + 3\{11932\} + \\
 & 5\{11941\} + 2\{1195\} + \{111021^2\} + \{11102^2\} + 3\{111031\} + 3\{11104\} + \{11^21^3\} + \\
 & \{11^221\} + \{1253^22\} + \{125431\} + 2\{125^221\} + 3\{125^23\} + 2\{1263^21\} + 2\{126421\} + \\
 & 3\{12643\} + \{12651^2\} + 5\{12652\} + \{126^21\} + 2\{127321\} + 4\{1273^2\} + 3\{12741^2\} +
 \end{aligned}$$

TABLE II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$

See page 161 for Explanation of Tables

$$\begin{aligned}
& 5\{12742\} + 7\{12751\} + 3\{1276\} + \{1282^1\} + 2\{12831^2\} + 5\{12832\} + 6\{12841\} + \\
& 5\{1285\} + \{12921^2\} + \{1292^2\} + 6\{12931\} + 4\{1294\} + 3\{121021\} + 4\{12103\} + \\
& \{12111^2\} + \{12112\} + \{122^1\} + \{133^4\} + 2\{1353^2\} + \{135421\} + 2\{13543\} + \\
& 3\{13521^2\} + 2\{1352^2\} + 2\{136321\} + 3\{1363^2\} + \{13641^2\} + 4\{13642\} + 5\{13651\} + \\
& 3\{136^2\} + 4\{13731^2\} + 4\{13732\} + 7\{13741\} + 3\{1375\} + \{13821^2\} + 2\{1382^2\} + \\
& 7\{13831\} + 5\{1384\} + 2\{1391^3\} + 4\{13921\} + 3\{1393\} + 2\{13101^2\} + 3\{13102\} + \\
& \{13111\} + \{1443^2\} + \{145321\} + 3\{1453^2\} + 2\{14541^2\} + 2\{14542\} + 3\{145^2\} + \\
& 2\{14631^2\} + 4\{14632\} + 5\{14641\} + 3\{1465\} + 2\{14721^2\} + \{1472^2\} + 7\{14731\} + \\
& 4\{1474\} + \{1481^3\} + 4\{14821\} + 5\{1483\} + 3\{1491^2\} + 3\{1492\} + 2\{14101\} + \\
& \{153^1\} + \{1543^2\} + \{154^22\} + 3\{15531^2\} + 2\{15532\} + 3\{15541\} + \{15621^2\} + \\
& \{1562^2\} + 5\{15631\} + 4\{1564\} + 2\{1571^3\} + 4\{15721\} + 3\{1573\} + 3\{1581^2\} + \\
& 3\{1582\} + \{1591\} + \{1510\} + \{163^3\} + \{16431^2\} + \{16432\} + \{164^21\} + \{16521^2\} + \\
& 4\{16531\} + \{1654\} + \{1661^3\} + 3\{16621\} + 3\{1663\} + 3\{1671^2\} + 2\{1672\} + \\
& 2\{1681\} + \{17321^2\} + 2\{17431\} + \{174^2\} + 2\{1751^3\} + 2\{17521\} + \{1753\} + \\
& 2\{1761^2\} + 2\{1762\} + \{1771\} + \{183^2\} + \{1841^3\} + \{18421\} + \{1843\} + 2\{1851^2\} + \\
& \{1861\} + \{1931^3\} + \{1941^2\} + \{1942\} + \{2031^2\} + \{211^4\}. \\
\{6\} \otimes \{1^5\} = & \{7^22\} + \{8^253\} + \{8^264^2\} + \{975^24\} + \{97^243\} + \{97^252\} + \{97^261\} + \{97^3\} + \\
& \{985^23\} + \{98652\} + \{98742\} + \{98751\} + \{9^25^22\} + \{9^263^2\} + \{9^2651\} + \\
& \{9^2732\} + \{9^2741\} + 2\{9^275\} + \{9^2831\} + \{9^3\} + \{105^4\} + \{1075^23\} + \{107643\} + \\
& \{107652\} + \{107^23^2\} + \{107^242\} + 2\{107^251\} + \{107^26\} + \{108543\} + \{1085^22\} + \\
& 2\{108642\} + \{108651\} + \{1086^2\} + \{108732\} + 2\{108741\} + 2\{10875\} + \{108^22^2\} + \\
& \{108^24\} + \{10953^2\} + \{109542\} + 2\{1095^21\} + 2\{109632\} + 2\{109641\} + \\
& 2\{10965\} + \{10972^2\} + 3\{109731\} + 3\{10974\} + \{109821\} + 2\{10983\} + \{109^21^2\} + \\
& \{109^22\} + \{10^24^22\} + \{10^2532\} + \{10^2541\} + \{10^262^2\} + \{10^2631\} + 3\{10^264\} + \\
& \{10^2721\} + 2\{10^273\} + 2\{10^282\} + \{10^3\} + \{11652^3\} + \{117543\} + 2\{1175^22\} + \\
& \{11763^2\} + \{117642\} + 2\{117651\} + 2\{117^232\} + 3\{117^241\} + 3\{117^25\} + \\
& \{11853^2\} + 2\{118542\} + 3\{1185^21\} + 2\{118632\} + 3\{118641\} + 3\{11865\} + \\
& \{11872^2\} + 3\{118731\} + 4\{11874\} + \{118^221\} + \{118^23\} + \{11943^2\} + 3\{119532\} + \\
& 3\{119541\} + 4\{1195^2\} + \{11962^2\} + 5\{119631\} + 4\{11964\} + 4\{119721\} + \\
& 7\{11973\} + \{11981^2\} + 3\{11982\} + 2\{119^21\} + \{1110432\} + \{11104^21\} + \\
& \{111052^2\} + 4\{1110531\} + 4\{111054\} + 3\{1110621\} + 5\{111063\} + 2\{111071^2\} + \\
& 5\{111072\} + 3\{111081\} + \{11109\} + \{11^23^22\} + \{11^2431\} + 2\{11^2521\} + 4\{11^253\} + \\
& 3\{11^261^2\} + 2\{11^262\} + 3\{11^271\} + \{125^33\} + \{1265^22\} + \{126^242\} + 2\{12753^2\} + \\
& 2\{127542\} + 3\{1275^21\} + 2\{127632\} + 3\{127641\} + 3\{12765\} + 4\{127^231\} + \\
& 4\{127^24\} + \{1284^22\} + 3\{128532\} + 4\{128541\} + 4\{1285^2\} + 3\{12862^2\} + \\
& 4\{128631\} + 6\{12864\} + 4\{128721\} + 6\{12873\} + 3\{128^22\} + \{1293^3\} + \\
& 2\{129432\} + \{1294^21\} + 2\{12952^2\} + 7\{129531\} + 6\{12954\} + 5\{129621\} + \\
& 10\{12963\} + 4\{12971^2\} + 8\{12972\} + 4\{12981\} + \{129^2\} + \{12103^22\} + \\
& 2\{121042^2\} + 3\{1210431\} + 3\{12104^2\} + 5\{1210521\} + 8\{121053\} + 2\{121061^2\} + \\
& 10\{121062\} + 7\{121071\} + 4\{12108\} + 2\{12113^21\} + 3\{1211421\} + 4\{121143\} + \\
& 3\{121151^2\} + 7\{121152\} + 6\{121161\} + 3\{12117\} + \{122^23\} + \{12^2321\} + \{12^23^2\} + \\
& 4\{12^242\} + 3\{12^251\} + 4\{12^26\} + \{135^32\} + \{13653^2\} + \{136542\} + 2\{1365^21\} + \\
& \{136^32\} + \{136^25\} + \{13743^2\} + 3\{137532\} + 4\{137541\} + 5\{1375^2\} + \{13762^2\} + \\
& 5\{137631\} + 5\{13764\} + 3\{137221\} + 6\{137^23\} + \{1383^3\} + 2\{138432\} + \\
& \{1384^21\} + 2\{13852^2\} + 7\{138531\} + 7\{13854\} + 5\{138621\} + 9\{13863\} + \\
& 3\{13871^2\} + 8\{13872\} + 2\{138^21\} + 2\{1393^22\} + \{13942^2\} + 5\{139431\} + \\
& 2\{1394^2\} + 7\{139521\} + 13\{13953\} + 5\{13961^2\} + 11\{13962\} + 10\{13971\} + \\
& 3\{1398\} + \{131032^2\} + 3\{13103^21\} + 4\{1310421\} + 8\{131043\} + 5\{131051^2\} + \\
& 12\{131052\} + 11\{131061\} + 6\{13107\} + 3\{1311321\} + 5\{13113^2\} + 4\{131141^2\} + \\
& 6\{131142\} + 11\{131151\} + 5\{13116\} + 2\{131231^2\} + 4\{131232\} + 6\{131241\} + \\
& 5\{13125\} + \{1321^22\} + 3\{13231\} + \{13^24\} + \{145^23^2\} + 2\{145^31\} + 2\{146532\} + \\
& 2\{146541\} + 2\{1465^2\} + \{146^22^2\} + \{146^231\} + 2\{146^24\} + \{1473^3\} + 2\{147432\} + \\
& \{1474^21\} + \{14752^2\} + 7\{147531\} + 6\{14754\} + 4\{147621\} + 8\{14763\} + \\
& 4\{147^21^2\} + 5\{147^22\} + \{1483^22\} + 2\{14842^2\} + 4\{148431\} + 3\{1484^2\} +
\end{aligned}$$

TABLE II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$

See page 161 for Explanation of Tables

$$\begin{aligned}
& 7\{148521\} + 12\{14853\} + 3\{14861^2\} + 12\{14862\} + 8\{14871\} + 3\{148^2\} + \\
& \{14932^2\} + 5\{1493^21\} + 5\{149421\} + 9\{14943\} + 7\{14951^2\} + 14\{14952\} + \\
& 13\{14961\} + 6\{1497\} + 4\{1410321\} + 5\{14103^2\} + 4\{141041^2\} + 12\{141042\} + \\
& 14\{141051\} + 10\{14106\} + \{14112^21\} + 4\{141131^2\} + 7\{141132\} + 11\{141141\} + \\
& 7\{14115\} + \{141221^2\} + 3\{14122^2\} + 7\{141231\} + 7\{14124\} + \{14131^3\} + \\
& 3\{141321\} + 3\{14133\} + 2\{142^2\} + \{155^232\} + \{155^241\} + 2\{155^3\} + \{1563^3\} + \\
& \{156432\} + \{15652^2\} + 4\{156531\} + 3\{15654\} + \{156^221\} + 3\{156^23\} + \\
& 2\{1573^22\} + 4\{157431\} + 2\{15742\} + 6\{157521\} + 11\{15753\} + 4\{15761^2\} + \\
& 8\{15762\} + 6\{157^21\} + \{15832^2\} + 4\{15832^1\} + 5\{158421\} + 8\{15843\} + \\
& 6\{15851^2\} + 13\{15852\} + 11\{15861\} + 5\{1587\} + 4\{159321\} + 8\{1593^2\} + \\
& 6\{15941^2\} + 11\{15942\} + 16\{15951\} + 8\{1596\} + \{15102^21\} + 5\{151031^2\} + \\
& 9\{151032\} + 13\{151041\} + 10\{15105\} + 3\{151121^2\} + 2\{15112^2\} + 11\{151131\} + \\
& 7\{15114\} + \{15121^3\} + 5\{151221\} + 6\{15123\} + 3\{15131^2\} + 2\{15132\} + \{15141\} + \\
& \{1653^3\} + 3\{165^231\} + \{165^24\} + \{1663^22\} + \{16642^2\} + 2\{166431\} + \{1664^2\} + \\
& 3\{166521\} + 6\{16653\} + 4\{166^22\} + 4\{1673^21\} + 4\{167421\} + 7\{16743\} + \\
& 6\{16751^2\} + 10\{16752\} + 9\{16761\} + 2\{167^2\} + 4\{168321\} + 6\{1683^2\} + \\
& 4\{16841^2\} + 11\{16842\} + 14\{16851\} + 9\{1686\} + \{1692^21\} + 6\{16931^2\} + \\
& 9\{16932\} + 14\{16941\} + 9\{1695\} + 2\{161021^2\} + 4\{16102^2\} + 12\{161031\} + \\
& 11\{16104\} + 2\{16111^3\} + 7\{161121\} + 7\{16113\} + 3\{16121^2\} + 6\{16122\} + \\
& 2\{16131\} + \{1614\} + \{1753^22\} + \{175431\} + 2\{175^221\} + 3\{175^23\} + 3\{1763^21\} + \\
& 2\{176421\} + 4\{17643\} + 3\{17651^2\} + 6\{17652\} + 3\{176^21\} + 3\{177321\} + \\
& 6\{1773^2\} + 5\{17741^2\} + 7\{17742\} + 12\{17751\} + 5\{1776\} + \{1782^21\} + 5\{17831^2\} + \\
& 8\{17832\} + 12\{17841\} + 8\{1785\} + 3\{17921^2\} + 2\{1792^2\} + 13\{17931\} + 8\{1794\} + \\
& 2\{17101^3\} + 8\{171021\} + 8\{17103\} + 5\{17111^2\} + 4\{17112\} + 3\{17121\} + \{183^4\} + \\
& 2\{1853^21\} + \{185421\} + 2\{18543\} + 3\{185^21^2\} + 2\{185^22\} + 2\{186321\} + \\
& 4\{1863^2\} + 2\{18641^2\} + 5\{18642\} + 6\{18651\} + 4\{186^2\} + 5\{18731^2\} + 6\{18732\} + \\
& 10\{18741\} + 5\{1875\} + 2\{18821^2\} + 3\{1882^2\} + 11\{18831\} + 8\{1884\} + 3\{1891^3\} + \\
& 7\{18921\} + 7\{1893\} + 4\{18101^2\} + 6\{18102\} + 3\{18111\} + \{1812\} + \{1943^21\} + \\
& \{195321\} + 3\{1953^2\} + 2\{19541^2\} + 2\{19542\} + 3\{195^21\} + 3\{19631^2\} + \\
& 4\{19632\} + 6\{19641\} + 3\{1965\} + 3\{19721^2\} + \{1972^2\} + 9\{19731\} + 5\{1974\} + \\
& 2\{1981^3\} + 6\{19821\} + 6\{1983\} + 5\{1991^2\} + 4\{1992\} + 3\{19101\} + \{203^31\} + \\
& \{2043^2\} + \{204^22\} + 3\{20531^2\} + 2\{20532\} + 3\{20541\} + \{20621^2\} + \{2062^2\} + \\
& 6\{20631\} + 4\{2064\} + 2\{2071^3\} + 5\{20721\} + 4\{2073\} + 4\{2081^2\} + 4\{2082\} + \\
& 2\{2091\} + \{2010\} + \{213^3\} + \{21431^2\} + \{21432\} + \{214^21\} + \{21521^2\} + \\
& 4\{21531\} + \{2154\} + 2\{2161^3\} + 3\{21621\} + 3\{2163\} + 4\{2171^2\} + 2\{2172\} + \\
& 2\{2181\} + \{223^21^2\} + 2\{22431\} + \{224^2\} + 2\{2251^3\} + 2\{22521\} + \{2253\} + \\
& 2\{2261^2\} + 2\{2262\} + \{2271\} + \{233^21\} + \{2341^3\} + \{23421\} + \{2343\} + 2\{2351^2\} + \\
& \{2361\} + \{2431^3\} + \{2441^2\} + \{2442\} + \{2531^2\} + \{261^4\}.
\end{aligned}$$

$$\{n\} \otimes \{1^6\}$$

$$\{2\} \otimes \{1^6\} = \{4^3\} + \{5421\} + \{631^3\} + \{71^5\}.$$

$$\begin{aligned}
\{3\} \otimes \{1^6\} = & \{3^6\} + \{53^41\} + \{5^23^21^2\} + \{5^31^3\} + \{63^4\} + \{643^22\} + \{653^21\} + \{65421\} + \\
& \{6^23^2\} + \{6^251\} + \{73^31^2\} + \{743^21\} + \{74^23\} + \{7531^3\} + \{75321\} + \{7541^2\} + \\
& \{7542\} + \{7631^2\} + \{7632\} + \{7641\} + \{7^21^4\} + \{7^22^2\} + \{7^24\} + \{83^31\} + \\
& \{84321\} + \{843^2\} + \{84^22\} + 2\{8531^2\} + \{8532\} + \{8541\} + \{8621^2\} + 2\{8631\} + \\
& \{864\} + \{8721\} + \{8^21^2\} + \{93^21^3\} + \{9431^2\} + \{9432\} + 2\{94^21\} + \{951^4\} + \\
& \{9521^2\} + \{952^2\} + \{9531\} + \{961^3\} + \{9621\} + \{963\} + \{972\} + \{103^21^2\} + \\
& \{10421^2\} + \{10431\} + \{104^2\} + \{1051^3\} + \{10521\} + \{1061^2\} + \{1131^4\} + \{1141^3\} + \\
& \{11421\} + \{1231^3\} + \{131^5\}.
\end{aligned}$$

$$\begin{aligned}
\{4\} \otimes \{1^6\} = & \{65^33\} + \{6^25421\} + \{6^32^3\} + \{75^23^21\} + \{75^31^2\} + \{75^32\} + \{76432^2\} + \{765321\} + \\
& \{7653^2\} + \{76542\} + \{765^21\} + \{76^232\} + \{7^23^31\} + \{7^243^2\} + \{7^2531^2\} + \{7^2532\} + \\
& \{7^2541\} + \{7^2631\} + \{7^264\} + \{7^31^3\} + \{853^22\} + \{85^2321\} + \{85^23^2\} + \{85^241^2\} + \\
& \{85^242\} + \{85^31\} + \{863^31\} + \{864321\} + \{8643^2\} + \{864^22\} + \{8652^21\} +
\end{aligned}$$

TABLE II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$

See page 161 for Explanation of Tables

$$\begin{aligned}
& \{86531^2\} + 3\{86532\} + 2\{86541\} + \{865^2\} + \{86^22^2\} + \{86^231\} + \{86^24\} + \\
& \{873^221\} + \{873^3\} + \{87431^2\} + 2\{87432\} + \{874^21\} + \{87521^2\} + \{8752^2\} + \\
& 4\{87531\} + 2\{8754\} + 2\{87621\} + 2\{8763\} + \{87^21^2\} + \{87^22\} + \{87^23^22\} + \\
& \{8^2421^2\} + \{8^242^2\} + 2\{8^2431\} + \{8^24^2\} + 2\{8^2521\} + 3\{8^253\} + \{8^261^2\} + 2\{8^262\} + \\
& \{8^271\} + \{8^3\} + \{93^5\} + \{953^31\} + \{954321\} + \{9543^2\} + 2\{95^231^2\} + 2\{95^232\} + \\
& 2\{95^241\} + \{95^3\} + \{963^221\} + 2\{963^3\} + \{9642^21\} + \{96431^2\} + 3\{96432\} + \\
& \{964^21\} + \{96521^2\} + 2\{9652^2\} + 5\{96531\} + 2\{9654\} + \{96^221\} + 3\{96^23\} + \\
& 2\{973^21^2\} + 2\{973^22\} + \{97421^2\} + \{9742^2\} + 5\{97431\} + 2\{974^2\} + 2\{9751^3\} + \\
& 5\{97521\} + 4\{9753\} + 2\{9761^2\} + 3\{9762\} + \{97^21\} + \{98321^2\} + \{9832^2\} + \\
& 3\{983^21\} + 4\{98421\} + 3\{9843\} + 3\{9851^2\} + 4\{9852\} + 3\{9861\} + \{9^231^3\} + \\
& \{9^2321\} + \{9^23^2\} + 2\{9^241^2\} + 2\{9^242\} + \{9^251\} + \{9^26\} + \{1043^31\} + \{1053^221\} + \\
& 2\{1053^3\} + \{105431^2\} + 2\{105432\} + \{1054^21\} + 2\{105^221^2\} + \{105^22^2\} + \\
& 4\{105^231\} + \{105^34\} + 2\{1063^21^2\} + 3\{1063^22\} + \{106421^2\} + 2\{10642^2\} + \\
& 5\{106431\} + 2\{1064^2\} + 5\{106521\} + 5\{10653\} + \{106^21^2\} + 3\{106^22\} + \\
& \{107321^2\} + \{1073^22\} + 5\{1073^21\} + 2\{10741^3\} + 5\{107421\} + 6\{10743\} + \\
& 5\{10751^2\} + 6\{10752\} + 4\{10761\} + \{107^2\} + \{10831^3\} + 4\{108321\} + 4\{1083^2\} + \\
& 4\{10841^2\} + 6\{10842\} + 6\{10851\} + 2\{1086\} + \{1092^21\} + 3\{10931^2\} + 3\{10932\} + \\
& 4\{10941\} + \{1095\} + \{10^221^2\} + 2\{10^231\} + 2\{10^24\} + \{113^41\} + \{1143^3\} + \\
& \{114^232\} + 2\{1153^21^2\} + 2\{1153^22\} + \{115421^2\} + \{11542^2\} + 4\{115431\} + \\
& \{1154^2\} + 2\{115^21^3\} + 3\{115^221\} + 2\{115^23\} + \{116321^2\} + \{11632^2\} + 5\{1163^21\} + \\
& \{11641^3\} + 5\{116421\} + 6\{11643\} + 4\{11651^2\} + 5\{11652\} + 3\{116^21\} + \\
& 2\{11731^3\} + 5\{117321\} + 3\{1173^2\} + 6\{11741^2\} + 7\{11742\} + 5\{11751\} + \\
& 2\{1176\} + \{11821^3\} + \{1182^21\} + 5\{11831^2\} + 5\{11832\} + 7\{11841\} + 3\{1185\} + \\
& \{1191^4\} + 2\{11921^2\} + 2\{1192^2\} + 4\{11931\} + 2\{1194\} + \{11101^3\} + 2\{111021\} + \\
& \{11103\} + \{11^22\} + \{123^4\} + \{1243^21^2\} + \{1243^22\} + \{124^231\} + \{124^3\} + \\
& \{125321^2\} + 4\{1253^21\} + \{12541^3\} + 4\{125421\} + 3\{12543\} + 3\{125^21^2\} + \\
& 2\{125^22\} + 2\{12631^3\} + 4\{126321\} + 4\{1263^2\} + 4\{12641^2\} + 6\{12642\} + \\
& 5\{12651\} + 2\{126^2\} + \{12721^3\} + \{1272^21\} + 6\{12731^2\} + 5\{12732\} + 7\{12741\} + \\
& 2\{1275\} + 3\{12821^2\} + 2\{1282^2\} + 6\{12831\} + 3\{1284\} + 2\{1291^3\} + 3\{12921\} + \\
& 2\{1293\} + \{12101^2\} + \{12102\} + \{133^21^2\} + 2\{1343^21\} + \{134^221\} + 2\{134^23\} + \\
& 2\{13531^3\} + 3\{135321\} + 2\{1353^2\} + 4\{13541^2\} + 3\{13542\} + \{135^21\} + \{1362^21\} + \\
& 5\{13631^2\} + 4\{13632\} + 6\{13641\} + \{1365\} + 2\{1371^4\} + 3\{13721^2\} + 2\{1372^2\} + \\
& 5\{13731\} + 3\{1374\} + 2\{1381^3\} + 4\{13821\} + 2\{1383\} + \{1391^2\} + \{1392\} + \\
& \{13101\} + \{143^31\} + \{14431^3\} + \{144321\} + \{1443^2\} + \{144^21^2\} + 2\{144^22\} + \\
& \{14521^3\} + 4\{14531^2\} + 2\{14532\} + 3\{14541\} + \{1461^4\} + 3\{14621^2\} + \{1462^2\} + \\
& 4\{14631\} + 2\{1464\} + 2\{1471^3\} + 3\{14721\} + \{1473\} + 2\{1481^2\} + \{1482\} + \\
& \{153^21^3\} + 2\{15431^2\} + \{15432\} + 2\{154^21\} + \{1551^4\} + 2\{15521^2\} + \{1552^2\} + \\
& 2\{15531\} + 2\{1561^3\} + 2\{15621\} + \{1563\} + \{1571^2\} + \{1572\} + \{163^21^2\} + \\
& \{1641^4\} + \{16421^2\} + \{16431\} + \{164^2\} + 2\{1651^3\} + \{16521\} + \{1661^2\} + \{1731^4\} + \\
& \{1741^3\} + \{17421\} + \{1831^3\} + \{191^5\}.
\end{aligned}$$

$$\{n\} \otimes \{1^7\}$$

$$\{2\} \otimes \{1^7\} = \{54^21\} + \{5^22^2\} + \{6421^2\} + \{731^4\} + \{81^6\}.$$

$$\begin{aligned}
\{3\} \otimes \{1^7\} = & \{3^7\} + \{53^51\} + \{5^23^31^2\} + \{5^331^3\} + \{63^5\} + \{643^32\} + \{653^31\} + \{654321\} + \\
& \{65^231^2\} + 2\{6^23^3\} + \{6^2432\} + \{6^2531\} + \{6^33\} + \{73^41^2\} + \{743^31\} + \{74^23^2\} + \\
& \{753^21^3\} + \{753^221\} + \{75431^2\} + \{75432\} + \{754^21\} + \{75^21^4\} + \{75^221^2\} + \\
& \{75^22^2\} + \{763^21^2\} + \{763^22\} + \{76421^2\} + 2\{76431\} + \{76521\} + \{7653\} + \\
& \{76^21^2\} + \{7231^4\} + \{7232^2\} + \{7241^3\} + \{72421\} + \{7243\} + \{7252\} + \{73\} + \\
& \{83^41\} + \{843^221\} + \{843^3\} + \{843^232\} + 2\{853^21^2\} + \{853^22\} + \{85421^2\} + \\
& \{8542^2\} + 2\{85431\} + \{854^2\} + \{85^21^3\} + \{85^221\} + \{86321^2\} + 3\{863^21\} + \\
& \{8641^3\} + 2\{86421\} + 2\{8643\} + 2\{8651^2\} + \{8652\} + \{86^21\} + \{8731^3\} + \\
& 2\{87321\} + \{8741^2\} + 2\{8742\} + \{8751\} + 2\{8731^2\} + \{8741\} + \{93^31^3\} + \\
& \{943^21^2\} + \{943^22\} + 2\{94^231\} + \{94^3\} + \{9531^4\} + \{95321^2\} + \{9532^2\} + \\
& \{953^21\} + \{9541^3\} + 3\{95421\} + \{9543\} + \{95^22\} + 2\{9631^3\} + 2\{96321\} +
\end{aligned}$$

TABLE II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$

See page 161 for Explanation of Tables

$$\begin{aligned}
& 2\{963^2\} + 3\{9641^2\} + 2\{9642\} + \{9651\} + \{971^5\} + \{9721^3\} + \{972^21\} + \{9731^2\} + \\
& 2\{9732\} + 2\{9741\} + \{975\} + \{9821^2\} + \{982^2\} + \{9831\} + \{9^23\} + \{103^31^2\} + \\
& \{104321^2\} + \{1043^21\} + \{104^221\} + 2\{104^23\} + 2\{10531^3\} + 2\{105321\} + \\
& 2\{10541^2\} + 2\{10542\} + \{10621^3\} + \{1062^21\} + 3\{10631^2\} + \{10632\} + 2\{10641\} + \\
& \{1071^4\} + \{10721^2\} + \{10731\} + \{1074\} + \{1081^3\} + \{10821\} + \{113^21^4\} + \\
& \{11431^3\} + \{114321\} + 2\{114^21^2\} + \{114^22\} + \{1151^5\} + \{11521^3\} + \{1152^21\} + \\
& \{11531^2\} + \{11532\} + \{11541\} + \{1161^4\} + 2\{11621^2\} + \{11631\} + \{11721\} + \\
& \{123^21^3\} + \{12421^3\} + \{12431^2\} + \{124^21\} + \{1251^4\} + \{12521^2\} + \{1252^2\} + \\
& \{1261^3\} + \{1331^5\} + \{1341^4\} + \{13421^2\} + \{1431^4\} + \{151^6\}. \\
\{4\} \otimes \{1^7\} = & \{6^25^242\} + \{6^34^21^2\} + \{6^352^21\} + \{75^32^2\} + \{75^41\} + \{7654321\} + \{765^231^2\} + \\
& \{765^32\} + \{765^241\} + \{765^3\} + \{76^232^3\} + \{76^242^21\} + \{76^2432\} + \{76^252^2\} + \\
& \{76^2531\} + \{7^24^22^3\} + \{7^253^221\} + \{7^253^3\} + \{7^25432\} + \{7^25^221^2\} + 2\{7^25^231\} + \\
& \{7^263^21^2\} + \{7^263^22\} + \{7^2642^2\} + \{7^26431\} + \{7^264^2\} + \{7^26521\} + \{7^2653\} + \\
& \{7^26^22\} + \{7^33^21\} + \{7^341^3\} + \{7^343\} + \{7^351^2\} + \{85^331^1\} + \{85^331^2\} + \{85^332\} + \\
& \{85^341\} + \{8643^22\} + \{8653^221\} + \{8653^3\} + \{86542^21\} + \{865431^2\} + \\
& 2\{865432\} + \{8654^21\} + \{865^221^2\} + 2\{865^22^2\} + 3\{865^231\} + 2\{865^24\} + \\
& \{86^232^21\} + 2\{86^23^22\} + \{86^2421^2\} + 2\{86^242^2\} + 2\{86^2431\} + 2\{86^2521\} + \\
& 2\{86^253\} + \{873^41\} + \{8743^221\} + \{8743^3\} + \{874^232\} + \{87532^21\} + 2\{8753^21^2\} + \\
& 3\{8753^22\} + \{875421^2\} + 2\{87542^2\} + 4\{875431\} + \{8754^2\} + \{875^21^3\} + \\
& 4\{875^221\} + 3\{875^23\} + \{876321^2\} + 2\{87632^2\} + 4\{8763^21\} + 4\{876421\} + \\
& 4\{87643\} + 2\{87651^2\} + 4\{87652\} + \{876^21\} + \{87^231^3\} + 2\{87^2321\} + \{87^23^2\} + \\
& 2\{87^241^2\} + 3\{87^242\} + 2\{87^251\} + \{87^26\} + \{8^23^221\} + 2\{8^24^221^2\} + \\
& \{8^24^231\} + \{8^25321^2\} + 2\{8^2532^2\} + 3\{8^253^21\} + \{8^2541^3\} + 4\{8^25421\} + 4\{8^2543\} + \\
& \{8^25^21^2\} + 4\{8^25^22\} + \{8^262^21^2\} + 4\{8^26321\} + 4\{8^263^2\} + 3\{8^2641^2\} + 4\{8^2642\} + \\
& 4\{8^2651\} + \{8^272^21\} + 2\{8^2731^2\} + 4\{8^2732\} + 4\{8^2741\} + 2\{8^275\} + \{8^321^2\} + \\
& 2\{8^331\} + 2\{8^34\} + \{953^42\} + \{95^23^221\} + \{95^23^3\} + \{95^2431^2\} + \{95^2432\} + \\
& \{95^321^2\} + 3\{95^331\} + \{95^34\} + \{963^41\} + \{9643^221\} + \{9643^3\} + \{964^22^21\} + \\
& \{964^232\} + \{96532^21\} + 2\{9653^21^2\} + 4\{9653^22\} + 2\{965421^2\} + 3\{96542^2\} + \\
& 5\{965431\} + \{9654^2\} + \{965^21^3\} + 5\{965^221\} + 4\{965^23\} + \{96^22^21\} + \{96^2321^2\} + \\
& 3\{96^232^2\} + 3\{96^23^21\} + 4\{96^2421\} + 4\{96^243\} + \{96^251^2\} + 4\{96^252\} + \{96^31\} + \\
& \{973^321\} + 2\{973^4\} + \{9743^221\} + 2\{9743^21^2\} + 3\{9743^22\} + 2\{974^22^2\} + \\
& 2\{974^231\} + \{974^3\} + 3\{975321^2\} + 3\{97532^2\} + 9\{9753^21\} + 2\{97541^3\} + \\
& 8\{975421\} + 7\{97543\} + 6\{975^21^2\} + 5\{975^22\} + \{9762^3\} + 2\{97631^3\} + \\
& 8\{976321\} + 6\{9763^2\} + 5\{97641^2\} + 10\{97642\} + 6\{97651\} + 2\{976^2\} + \\
& \{972^231^3\} + \{972^22^21\} + 5\{972^31^2\} + 4\{972^32\} + 5\{972^41\} + \{972^5\} + \{983^31^2\} + \\
& 2\{983^32\} + 2\{984321^2\} + 2\{9843^22\} + 5\{9843^21\} + 4\{984^221\} + 3\{984^23\} + \\
& \{9852^21^2\} + \{9852^3\} + 2\{98531^3\} + 10\{985321\} + 7\{9853^2\} + 7\{98541^2\} + \\
& 10\{98542\} + 6\{985^21\} + \{98621^3\} + 4\{9862^21\} + 7\{98631^2\} + 11\{98632\} + \\
& 11\{98641\} + 5\{9865\} + 4\{98721^2\} + 4\{9872^2\} + 9\{98731\} + 4\{9874\} + \\
& 3\{98^221\} + 3\{98^23\} + \{9^23^221^2\} + 2\{9^23^31\} + \{9^242^3\} + \{9^2431^3\} + 4\{9^24321\} + \\
& 2\{9^243^2\} + \{9^24^21^2\} + 4\{9^24^22\} + \{9^2521^3\} + 2\{9^252^21\} + 7\{9^2531^2\} + 6\{9^2532\} + \\
& 6\{9^2541\} + \{9^261^4\} + 3\{9^2621^2\} + 4\{9^262^2\} + 7\{9^2631\} + 5\{9^264\} + 2\{9^271^3\} + \\
& 4\{9^2721\} + 2\{9^273\} + \{9^281^2\} + 2\{9^282\} + \{103^6\} + \{1053^41\} + \{10543^221\} + \\
& \{10543^3\} + 2\{105^23^21^2\} + 2\{105^23^22\} + \{105^2421^2\} + \{105^242^2\} + 3\{105^2431\} + \\
& \{105^24^2\} + 2\{105^31^3\} + 3\{105^321\} + 2\{105^33\} + \{1063^321\} + 2\{1063^4\} + \\
& \{106432^21\} + \{10643^21^2\} + 4\{10643^22\} + \{1064^221^2\} + \{1064^22^2\} + 2\{1064^231\} + \\
& 3\{1065321^2\} + 4\{106532^2\} + 8\{10653^21\} + \{106541^3\} + 9\{1065421\} + 6\{106543\} + \\
& 4\{1065^21^2\} + 7\{1065^22\} + \{106^22^21^2\} + \{106^23^2\} + 6\{106^2321\} + 7\{106^23^2\} + \\
& 3\{106^241^2\} + 6\{106^242\} + 5\{106^251\} + \{106^3\} + 3\{1073^31^2\} + 3\{1073^32\} + \\
& 2\{1074321^2\} + 3\{10743^22\} + 8\{10743^21\} + \{1074^21^3\} + 4\{1074^221\} + 5\{1074^23\} + \\
& \{10752^21^2\} + \{10752^3\} + 4\{107531^3\} + 14\{1075321\} + 10\{10753^2\} + 10\{107541^2\} + \\
& 14\{107542\} + 8\{1075^21\} + \{107621^3\} + 4\{10762^21\} + 10\{107631^2\} + 14\{107632\} + \\
& 14\{107641\} + 5\{10765\} + 2\{107^21^4\} + 4\{107^221^2\} + 4\{107^22^2\} + 8\{107^231\} + \\
& 6\{107^24\} + \{1083^221^2\} + 2\{1083^22^2\} + 5\{1083^31\} + \{10842^21^2\} + 2\{108431^3\} +
\end{aligned}$$

TABLE II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$

See page 161 for Explanation of Tables

$$\begin{aligned}
& 10\{1084321\} + 9\{10843^2\} + 5\{1084^21^2\} + 6\{1084^22\} + 2\{108521^3\} + 6\{10852^21\} + \\
& 14\{108531^2\} + 19\{108532\} + 17\{108541\} + 6\{1085^2\} + 8\{108621^2\} + 7\{10862^2\} + \\
& 22\{108631\} + 10\{10864\} + 3\{10871^3\} + 11\{108721\} + 9\{10873\} + 4\{108^21^2\} + \\
& 3\{108^22\} + 2\{1093^21^3\} + 4\{1093^221\} + 4\{1093^3\} + \{109421^3\} + 3\{10942^21\} + \\
& 8\{109431^2\} + 10\{109432\} + 8\{1094^21\} + \{10951^4\} + 8\{109521^2\} + 8\{10952^2\} + \\
& 17\{109531\} + 7\{10954\} + 4\{10961^3\} + 13\{109621\} + 11\{10963\} + 5\{10971^2\} + \\
& 7\{10972\} + 2\{10981\} + \{109^2\} + \{10^23^221\} + 2\{10^23^21^2\} + 4\{10^23^22\} + 4\{10^2421^2\} + \\
& \{10^242^2\} + 8\{10^2431\} + 2\{10^24^2\} + 2\{10^251^3\} + 8\{10^2521\} + 8\{10^253\} + 6\{10^261^2\} + \\
& 4\{10^262\} + 4\{10^271\} + \{1143^41\} + \{1153^321\} + 2\{1153^4\} + \{11543^21^2\} + \\
& 2\{11543^22\} + \{1154^231\} + 2\{115^2321^2\} + \{115^23^22\} + 5\{115^23^21\} + \\
& 2\{115^241^3\} + 4\{115^2421\} + 3\{115^243\} + 4\{115^31^2\} + 2\{115^32\} + 2\{1163^31^2\} + \\
& 3\{1163^22\} + 2\{1164321^2\} + 3\{116432^2\} + 7\{11643^21\} + 4\{1164^221\} + 4\{1164^23\} + \\
& \{11652^21^2\} + \{11652^3\} + 3\{116531^3\} + 12\{1165321\} + 9\{11653^2\} + 8\{116541^2\} + \\
& 11\{116542\} + 6\{1165^21\} + 3\{116^221^2\} + 5\{116^231^2\} + 10\{116^232\} + 9\{116^241\} + \\
& 4\{116^25\} + 2\{1173^221^2\} + \{1173^22^2\} + 7\{1173^31\} + \{11742^3\} + 3\{117431^3\} + \\
& 11\{1174321\} + 9\{11743^2\} + 5\{1174^21^2\} + 10\{1174^22\} + 3\{117521^3\} + 6\{11752^21\} + \\
& 18\{117531^2\} + 19\{117532\} + 18\{117541\} + 3\{1175^2\} + \{11761^4\} + 8\{117621^2\} + \\
& 9\{11762^2\} + 20\{117631\} + 11\{11764\} + 4\{117^21^3\} + 8\{117^221\} + 5\{117^23\} + \\
& 2\{1183^21^3\} + 7\{1183^221\} + 5\{1183^3\} + 2\{118421^3\} + 5\{11842^21\} + 13\{118431^2\} + \\
& 17\{118432\} + 12\{1184^21\} + 2\{11851^4\} + 13\{118521^2\} + 11\{11852^2\} + 28\{118531\} + \\
& 13\{11854\} + 6\{11861^3\} + 20\{118621\} + 17\{11863\} + 8\{11871^2\} + 10\{11872\} + \\
& 4\{118^21\} + \{119321^3\} + 2\{11932^21\} + 8\{1193^21^2\} + 6\{1193^22\} + 2\{11941^4\} + \\
& 8\{119421^2\} + 9\{11942^2\} + 19\{119431\} + 8\{1194^2\} + 8\{11951^3\} + 20\{119521\} + \\
& 13\{11953\} + 10\{11961^2\} + 14\{11962\} + 6\{11971\} + \{1198\} + \{111031^4\} + \\
& 4\{1110321^2\} + 3\{111032^2\} + 7\{11103^21\} + 5\{111041^3\} + 12\{1110421\} + 9\{111043\} + \\
& 9\{111051^2\} + 10\{111052\} + 7\{111061\} + 2\{11107\} + \{112^21^4\} + \{112^23\} + \\
& 2\{112^231^3\} + 4\{112^2321\} + 3\{112^241^2\} + 6\{112^242\} + 3\{112^251\} + 2\{112^6\} + \{123^51\} + \\
& \{1243^4\} + \{124^23^22\} + 2\{1253^31^2\} + 2\{1253^32\} + \{1254321^2\} + \{125432^2\} + \\
& 4\{12543^21\} + 2\{1254^221\} + 2\{1254^23\} + 3\{125^231^3\} + 6\{125^2321\} + 3\{125^23^2\} + \\
& 5\{125^241^2\} + 5\{125^242\} + 2\{125^31\} + \{1263^221^2\} + \{1263^22^2\} + 6\{1263^31\} + \\
& \{12642^21^2\} + 2\{126431^3\} + 9\{1264321\} + 9\{12643^2\} + 4\{1264^21^2\} + 6\{1264^22\} + \\
& 2\{126521^3\} + 5\{12652^21\} + 12\{126531^2\} + 15\{126532\} + 13\{126541\} + 4\{1265^2\} + \\
& 4\{126^221^2\} + 3\{126^22^2\} + 13\{126^231\} + 6\{126^24\} + 3\{1273^21^3\} + 7\{1273^221\} + \\
& 5\{1273^3\} + 2\{127421^3\} + 4\{12742^21\} + 14\{127431^2\} + 16\{127432\} + 12\{1274^21\} + \\
& 3\{12751^4\} + 13\{127521^2\} + 11\{12752^2\} + 26\{127531\} + 11\{12754\} + 6\{12761^3\} + \\
& 17\{127621\} + 14\{12763\} + 4\{127^21^2\} + 7\{127^22\} + 2\{128321^3\} + 2\{12832^21\} + \\
& 9\{1283^21^2\} + 10\{1283^22\} + \{12841^4\} + 12\{128421^2\} + 8\{12842^2\} + 25\{128431\} + \\
& 8\{1284^2\} + 9\{12851^3\} + 25\{128521\} + 19\{12853\} + 15\{12861^2\} + 15\{12862\} + \\
& 7\{12871\} + \{128^2\} + 2\{12931^4\} + 7\{129321^2\} + 5\{12932^2\} + 11\{1293^21\} + \\
& 8\{12941^3\} + 20\{129421\} + 14\{12943\} + 14\{12951^2\} + 16\{12952\} + 11\{12961\} + \\
& 3\{1297\} + 2\{12102^21^2\} + 5\{121031^3\} + 10\{1210321\} + 6\{12103^2\} + 12\{121041^2\} + \\
& 10\{121042\} + 10\{121051\} + 2\{12106\} + 2\{121121^3\} + 2\{12112^21\} + 5\{121131^2\} + \\
& 5\{121132\} + 5\{121141\} + 2\{12115\} + 2\{122^21^2\} + 2\{122^31\} + \{133^5\} + \{1343^31^2\} + \\
& \{1343^32\} + \{134^23^21\} + \{134^33\} + \{1353^221^2\} + 4\{1353^31\} + \{135431^3\} + \\
& 5\{1354321\} + 4\{13543^2\} + 2\{1354^21^2\} + 4\{1354^22\} + 2\{135^221^3\} + 2\{135^22^21\} + \\
& 8\{135^231^2\} + 5\{135^232\} + 5\{135^241\} + 3\{1363^21^3\} + 5\{1363^221\} + 5\{1363^3\} + \\
& \{136421^3\} + 3\{13642^21\} + 10\{136431^2\} + 12\{136432\} + 9\{1364^21\} + \{13651^4\} + \\
& 9\{136521^2\} + 7\{13652^2\} + 18\{136531\} + 6\{13654\} + 2\{136^21^3\} + 9\{136^221\} + \\
& 9\{136^23\} + \{137321^3\} + 2\{13732^21\} + 10\{1373^21^2\} + 7\{1373^22\} + 3\{13741^4\} + \\
& 10\{137421^2\} + 9\{13742^2\} + 22\{137431\} + 10\{1374^2\} + 10\{13751^3\} + 21\{137521\} + \\
& 13\{13753\} + 10\{13761^2\} + 12\{13762\} + 4\{137^21\} + 2\{13831^4\} + 8\{138321^2\} + \\
& 5\{13832^2\} + 13\{1383^21\} + 9\{13841^3\} + 22\{138421\} + 15\{13843\} + 16\{13851^2\} + \\
& 17\{13852\} + 12\{13861\} + 2\{1387\} + \{13921^4\} + \{1392^21^2\} + 2\{1392^3\} + \\
& 8\{13931^3\} + 13\{139321\} + 6\{1393^2\} + 14\{13941^2\} + 16\{13942\} + 10\{13951\} +
\end{aligned}$$

TABLE II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$
See page 161 for Explanation of Tables

$$\begin{aligned}
& 4\{1396\} + \{13101^5\} + 3\{131021^3\} + 4\{13102^21\} + 9\{131031^2\} + 7\{131032\} + \\
& 10\{131041\} + 3\{13105\} + 2\{13111^4\} + 3\{131121^2\} + 4\{13112^2\} + 4\{131131\} + \\
& 3\{13114\} + \{13121^3\} + \{131221\} + \{13123\} + \{132^2\} + \{143^41^2\} + 2\{1443^31\} + \\
& \{144^2321\} + 2\{144^23^2\} + \{144^32\} + 2\{1453^21^3\} + 3\{1453^221\} + 2\{1453^3\} + \\
& \{145421^3\} + \{14542^21\} + 6\{145431^2\} + 6\{145432\} + 5\{1454^21\} + 2\{145^21^4\} + \\
& 5\{145^221^2\} + 3\{145^22^2\} + 6\{145^231\} + 2\{145^24\} + \{146321^3\} + \{14632^21\} + \\
& 7\{1463^21^2\} + 6\{1463^22\} + \{14641^4\} + 8\{146421^2\} + 4\{14642^2\} + 16\{146431\} + \\
& 5\{1464^2\} + 6\{14651^3\} + 13\{146521\} + 9\{14653\} + 7\{146^21^2\} + 5\{146^22\} + \\
& 3\{14731^4\} + 7\{147321^2\} + 4\{14732^2\} + 10\{1473^21\} + 9\{14741^3\} + 18\{147421\} + \\
& 12\{14743\} + 12\{14751^2\} + 12\{14752\} + 7\{14761\} + 2\{147^2\} + \{14821^4\} + \\
& 2\{1482^21^2\} + 8\{14831^3\} + 13\{148321\} + 6\{1483^2\} + 16\{14841^2\} + 13\{14842\} + \\
& 11\{14851\} + 2\{1486\} + \{1491^5\} + 4\{14921^3\} + 5\{1492^21\} + 10\{14931^2\} + \\
& 8\{14932\} + 10\{14941\} + 3\{1495\} + 2\{14101^4\} + 6\{141021^2\} + 2\{14102^2\} + \\
& 6\{141031\} + 2\{14104\} + \{14111^3\} + 3\{141121\} + \{14113\} + \{14121^2\} + \{153^41\} + \\
& \{1543^21^3\} + \{1543^221\} + \{1543^3\} + \{154^231^2\} + 2\{154^232\} + 2\{154^31\} + \{155321^3\} + \\
& 5\{1553^21^2\} + 2\{1553^22\} + \{15541^4\} + 4\{155421^2\} + 3\{15542^2\} + 8\{155431\} + \\
& 3\{1554^2\} + 4\{155^21^3\} + 5\{155^221\} + \{155^23\} + 2\{15631^4\} + 5\{156321^2\} + \\
& 2\{15632^2\} + 7\{1563^21\} + 6\{15641^3\} + 12\{156421\} + 8\{15643\} + 8\{15651^2\} + \\
& 6\{15652\} + 4\{156^21\} + \{15721^4\} + \{1572^21^2\} + \{1572^3\} + 8\{15731^3\} + 10\{157321\} + \\
& 3\{1573^2\} + 11\{15741^2\} + 11\{15742\} + 6\{15751\} + 2\{1576\} + \{1581^5\} + 4\{15821^3\} + \\
& 4\{1582^21\} + 10\{15831^2\} + 7\{15832\} + 9\{15841\} + 2\{1585\} + 3\{1591^4\} + \\
& 5\{15921^2\} + 4\{1592^2\} + 5\{15931\} + 2\{1594\} + 2\{15101^3\} + 3\{151021\} + \{15103\} + \\
& \{15112\} + \{163^31^3\} + 2\{1643^21^2\} + \{1643^22\} + \{164^221^2\} + 3\{164^231\} + 2\{164^3\} + \\
& 2\{16531^4\} + 3\{165321^2\} + \{16532^2\} + 3\{1653^21\} + 4\{16541^3\} + 6\{165421\} + \\
& 3\{16543\} + 2\{165^21^2\} + 2\{165^22\} + \{1662^21^2\} + 6\{16631^3\} + 6\{166321\} + \\
& 3\{1663^2\} + 9\{16641^2\} + 5\{16642\} + 3\{16651\} + 2\{1671^5\} + 4\{16721^3\} + \\
& 3\{1672^21\} + 7\{16731^2\} + 4\{16732\} + 6\{16741\} + \{1675\} + 2\{1681^4\} + 6\{16821^2\} + \\
& 2\{1682^2\} + 4\{16831\} + \{1684\} + 2\{1691^3\} + 2\{16921\} + \{1693\} + \{16101^2\} + \\
& \{173^31^2\} + \{17431^4\} + \{174321^2\} + \{1743^21\} + \{174^21^3\} + 2\{174^221\} + 2\{174^23\} + \\
& \{17521^4\} + 4\{17531^3\} + 3\{175321\} + 4\{17541^2\} + 3\{17542\} + \{1761^5\} + \\
& 3\{17621^3\} + 2\{1762^21\} + 5\{17631^2\} + 2\{17632\} + 3\{17641\} + 3\{1771^4\} + \\
& 3\{17721^2\} + 2\{1772^2\} + 2\{17731\} + \{1774\} + 2\{1781^3\} + 2\{17821\} + \{183^21^4\} + \\
& 2\{18431^3\} + \{184321\} + 2\{184^21^2\} + \{184^22\} + \{1851^5\} + 2\{18521^3\} + \{1852^21\} + \\
& 2\{18531^2\} + \{18532\} + \{18541\} + 2\{1861^4\} + 3\{18621^2\} + \{18631\} + \{1871^3\} + \\
& \{18721\} + \{193^21^3\} + \{1941^5\} + \{19421^3\} + \{19431^2\} + \{194^21\} + 2\{1951^4\} + \\
& \{19521^2\} + \{1952^2\} + \{1961^3\} + \{2031^5\} + \{2041^4\} + \{20421^2\} + \{2131^4\} + \{221^6\}.
\end{aligned}$$

$$\{n\} \otimes \{1^8\}$$

$$\begin{aligned}
& \{2\} \otimes \{1^8\} = \{5^242\} + \{64^21^2\} + \{652^21\} + \{7421^3\} + \{831^5\} + \{91^7\}. \\
& \{3\} \otimes \{1^8\} = \{3^8\} + \{53^61\} + \{5^23^41^2\} + \{5^33^21^3\} + \{5^41^4\} + \{63^6\} + \{643^42\} + \{653^41\} + \\
& \{6543^221\} + \{65^23^21^2\} + \{65^2421^2\} + 2\{6^23^4\} + \{6^243^22\} + \{6^242^22\} + 2\{6^253^21\} + \\
& \{6^25^21^2\} + \{6^33^2\} + \{6^342\} + \{6^4\} + \{73^51^2\} + \{743^41\} + \{74^23^3\} + \{753^31^3\} + \\
& \{753^321\} + \{7543^21\} + \{7543^22\} + \{754^231\} + \{75^231^4\} + \{75^2321^2\} + \{75^232^2\} + \\
& \{75^241^3\} + \{75^2421\} + \{763^31^2\} + \{763^32\} + \{764321^2\} + 2\{7643^21\} + \{764^221\} + \\
& \{764^23\} + \{76531^3\} + 2\{765321\} + \{7653^2\} + \{76541^2\} + \{76542\} + \{76^231^2\} + \\
& \{76^232\} + \{76^241\} + \{7^23^21^4\} + \{7^23^22^2\} + \{7^2431^3\} + \{7^24321\} + \{7^243^2\} + \\
& 2\{7^24^21^2\} + \{7^251^5\} + \{7^2521^3\} + \{7^252^21\} + 2\{7^2532\} + \{7^2541\} + \{7^25^2\} + \\
& \{7^2621^2\} + \{7^2631\} + \{7^33\} + \{83^51\} + \{843^321\} + \{843^4\} + \{84^23^22\} + 2\{853^31^2\} + \\
& \{853^32\} + \{854321^2\} + \{8543^22\} + 2\{8543^21\} + \{854^221\} + \{854^23\} + 2\{85^231^3\} + \\
& 2\{85^2321\} + \{85^241^2\} + \{85^242\} + \{863^221^2\} + 3\{863^31\} + \{86431^3\} + 3\{864321\} + \\
& 3\{8643^2\} + \{864^21^2\} + 2\{864^22\} + \{86521^3\} + \{8652^21\} + 4\{86531^2\} + 2\{86532\} +
\end{aligned}$$

TABLE II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$
See page 161 for Explanation of Tables

$$\begin{aligned}
& 2\{86541\} + \{86^221^2\} + 3\{86^231\} + \{86^24\} + \{873^21^3\} + 2\{873^221\} + \{87421^3\} + \\
& \{8742^21\} + 3\{87431^2\} + 3\{87432\} + 2\{874^21\} + \{8751^4\} + 2\{87521^2\} + 2\{8752^2\} + \\
& 3\{87531\} + \{8754\} + \{8761^3\} + 2\{87621\} + \{8763\} + \{87^22\} + 3\{8^23^21^2\} + \\
& \{8^2421^2\} + \{8^242^2\} + 2\{8^2431\} + 2\{8^24^2\} + 2\{8^251^3\} + 2\{8^2521\} + \{8^261^2\} + \\
& \{8^262\} + \{93^41^3\} + \{943^31^2\} + \{943^32\} + 2\{94^23^21\} + \{94^33\} + \{953^21^4\} + \\
& \{953^221^2\} + \{953^22^2\} + \{953^31\} + \{95431^3\} + 3\{954321\} + \{9543^2\} + 2\{954^21^2\} + \\
& 2\{954^22\} + \{95^21^5\} + \{95^221^3\} + 2\{95^22^21\} + \{95^231^2\} + 2\{95^232\} + \{95^241\} + \\
& 2\{963^21^3\} + 2\{963^221\} + 2\{963^3\} + \{96421^3\} + \{9642^21\} + 5\{96431^2\} + \\
& 4\{96432\} + 3\{964^21\} + \{9651^4\} + 3\{96521^2\} + 2\{9652^2\} + 4\{96531\} + \{9654\} + \\
& 2\{96^21^3\} + 2\{96^221\} + \{96^23\} + \{9731^5\} + \{97321^3\} + \{9732^21\} + \{973^21^2\} + \\
& 3\{973^22\} + 2\{9741^4\} + 4\{97421^2\} + 2\{9742^2\} + 5\{97431\} + \{974^2\} + \{9751^3\} + \\
& 4\{97521\} + 4\{9753\} + 2\{9761^2\} + \{9762\} + \{97^21\} + \{9831^4\} + 2\{98321^2\} + \\
& \{9832^2\} + 2\{983^21\} + 2\{9841^3\} + 4\{98421\} + \{9843\} + 2\{9851^2\} + 2\{9852\} + \\
& \{9861\} + \{9^21^6\} + \{9^22^21^2\} + \{9^2321\} + 2\{9^23^2\} + \{9^241^2\} + \{9^242\} + \{9^251\} + \\
& \{103^41^2\} + \{1043^221^2\} + \{1043^31\} + \{104^2321\} + 2\{104^23^2\} + \{104^32\} + 2\{1053^21^3\} + \\
& 2\{1053^221\} + \{105421^3\} + \{10542^21\} + 3\{105431^2\} + 3\{105432\} + 3\{1054^21\} + \\
& \{105^21^4\} + 2\{105^221^2\} + \{105^231\} + \{105^24\} + \{106321^3\} + \{10632^21\} + \\
& 4\{1063^21^2\} + \{1063^22\} + \{10641^4\} + 4\{106421^2\} + 2\{10642^2\} + 6\{106431\} + \\
& 2\{1064^2\} + 3\{10651^3\} + 4\{106521\} + \{10653\} + 2\{106^21^2\} + \{106^22\} + 2\{10731^4\} + \\
& 3\{107321^2\} + 2\{10732^2\} + 2\{1073^21\} + 3\{10741^3\} + 5\{107421\} + 3\{10743\} + \\
& 2\{10751^2\} + 3\{10752\} + \{10761\} + \{107^2\} + \{10821^4\} + \{1082^3\} + 3\{10831^3\} + \\
& 3\{108321\} + 3\{10841^2\} + 3\{10842\} + \{10851\} + \{10921^3\} + \{1092^21\} + \{10931^2\} + \\
& \{10932\} + \{10941\} + \{1095\} + \{10^21^4\} + \{10^22^2\} + \{113^31^4\} + \{1143^21^3\} + \\
& \{1143^221\} + 2\{114^231^2\} + \{114^232\} + 2\{114^31\} + \{11531^5\} + \{115321^3\} + \\
& \{11532^21\} + \{1153^21^2\} + \{1153^22\} + \{11541^4\} + 3\{115421^2\} + 2\{11542^2\} + \\
& 3\{115431\} + \{1154^2\} + 2\{115^221\} + \{115^23\} + 2\{11631^4\} + 3\{116321^2\} + \\
& \{11632^2\} + 2\{1163^21\} + 4\{11641^3\} + 5\{116421\} + 2\{11643\} + 2\{11651^2\} + \\
& \{11652\} + \{1171^6\} + \{11721^4\} + 2\{1172^21^2\} + 2\{11731^3\} + 3\{117321\} + \{1173^2\} + \\
& 3\{11741^2\} + 2\{11742\} + 2\{11751\} + \{1181^5\} + \{11821^3\} + 2\{1182^21\} + 2\{11831^2\} + \\
& \{11832\} + \{11841\} + \{11921^2\} + \{11931\} + \{123^31^3\} + \{124321^3\} + \{1243^21^2\} + \\
& \{124^221^2\} + 2\{124^231\} + \{124^3\} + 2\{12531^4\} + 2\{125321^2\} + \{12532^2\} + \\
& 2\{12541^3\} + 3\{125421\} + \{12543\} + \{125^22\} + \{12621^4\} + \{1262^21^2\} + \{1262^3\} + \\
& 3\{12631^3\} + 2\{126321\} + 3\{12641^2\} + \{12642\} + \{1271^5\} + 2\{12721^3\} + \{1272^21\} + \\
& \{12731^2\} + \{12732\} + \{12741\} + \{1281^4\} + \{12821^2\} + \{1282^2\} + \{133^21^5\} + \\
& \{13431^4\} + \{134321^2\} + 2\{134^21^3\} + \{134^221\} + \{1351^6\} + \{13521^4\} + \{1352^21^2\} + \\
& \{13531^3\} + \{135321\} + \{13541^2\} + \{13542\} + \{1361^5\} + 2\{13621^3\} + \{1362^21\} + \\
& \{13631^2\} + \{13721^2\} + \{143^21^4\} + \{14421^4\} + \{14431^3\} + \{144^21^2\} + \{1451^5\} + \\
& \{14521^3\} + \{1452^21\} + \{1461^4\} + \{1531^6\} + \{1541^5\} + \{15421^3\} + \{1631^5\} + \{171^7\}.
\end{aligned}$$

$\{n\} \otimes \{1^9\}$

$$\begin{aligned}
& \{2\} \otimes \{1^9\} = \{5^33\} + \{65421\} + \{6^22^3\} + \{74^21^3\} + \{752^21^2\} + \{8421^4\} + \{931^6\} + \{101^8\}. \\
& \{3\} \otimes \{1^9\} = \{3^9\} + \{53^71\} + \{5^23^51^2\} + \{5^33^31^3\} + \{5^431^4\} + \{63^7\} + \{643^52\} + \{653^51\} + \\
& \{6543^321\} + \{65^23^31^2\} + \{65^24321^2\} + \{65^331^3\} + 2\{6^23^5\} + \{6^243^32\} + \{6^24^232^2\} + \\
& 2\{6^253^31\} + \{6^254321\} + \{6^25^231^2\} + 2\{6^33^3\} + \{6^3432\} + \{6^3531\} + \{6^43\} + \\
& \{73^61^2\} + \{743^51\} + \{74^23^4\} + \{753^41^3\} + \{753^421\} + \{7543^31^2\} + \{7543^32\} + \\
& \{754^23^21\} + \{75^23^21^4\} + \{75^23^221^2\} + \{75^23^22^2\} + \{75^2431^3\} + \{75^24321\} + \\
& \{75^24^21^2\} + \{75^31^5\} + \{75^321^3\} + \{75^32^21\} + \{763^41^2\} + \{763^42\} + \{7643^221^2\} + \\
& 2\{7643^31\} + \{764^2321\} + \{764^23^2\} + \{764^22\} + \{7653^21^3\} + 2\{7653^221\} + \\
& \{7653^3\} + \{765421^3\} + \{76542^21\} + 2\{765431^2\} + 2\{765432\} + \{765^221^2\} + \\
& \{765^231\} + 2\{76^23^21^2\} + \{76^23^22\} + \{76^242^2\} + 2\{76^2431\} + \{76^24^2\} + \{76^251^3\} + \\
& \{76^2521\} + \{76^32\} + \{7^23^31^4\} + \{7^23^32^2\} + \{7^243^21^3\} + \{7^243^221\} + \{7^243^3\} +
\end{aligned}$$

TABLE II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$

See page 161 for Explanation of Tables

$$\begin{aligned}
& 2\{7^24^231^2\} + \{7^24^31\} + \{7^2531^5\} + \{7^25321^3\} + \{7^2532^21\} + 2\{7^253^22\} + \{7^2541^4\} + \\
& 2\{7^25421^2\} + \{7^2542^2\} + 2\{7^25431\} + \{7^25^221\} + \{7^25^23\} + \{7^2631^4\} + \{7^26321^2\} + \\
& \{7^2632^2\} + \{7^263^21\} + \{7^2641^3\} + 2\{7^26421\} + \{7^2643\} + \{7^2652\} + \{7^31^6\} + \\
& \{7^32^21^2\} + 2\{7^33^2\} + \{7^341^2\} + \{7^351\} + \{83^61\} + \{843^21\} + \{843^5\} + \{84^23^32\} + \\
& 2\{853^41^2\} + \{853^42\} + \{8543^221^2\} + \{8543^22^2\} + 2\{8543^31\} + \{854^2321\} + \\
& \{854^23^2\} + 2\{85^23^21^3\} + 2\{85^23^221\} + \{85^2421^3\} + \{85^242^21\} + 2\{85^2431^2\} + \\
& \{85^2432\} + \{85^2421\} + \{85^31^4\} + \{85^321^2\} + \{85^32^2\} + \{863^321^2\} + 3\{863^41\} + \\
& \{8643^21^3\} + 3\{8643^221\} + 3\{8643^3\} + \{864^22^21\} + \{864^231^2\} + 3\{864^232\} + \\
& \{864^31\} + \{865321^3\} + \{86532^21\} + 5\{8653^21^2\} + 3\{8653^22\} + \{86541^4\} + \\
& 3\{865421^2\} + 2\{86542^2\} + 4\{865431\} + \{8654^2\} + 2\{865^21^3\} + 2\{865^221\} + \\
& 2\{86^2321^2\} + 4\{86^23^21\} + \{86^241^3\} + 3\{86^2421\} + 3\{86^243\} + 2\{86^251^2\} + \\
& \{86^252\} + \{86^31\} + \{873^31^3\} + 2\{873^321\} + \{874321^3\} + \{87432^21\} + 3\{8743^21^2\} + \\
& 3\{8743^22\} + 2\{874^221^2\} + \{874^22^2\} + 4\{874^231\} + 2\{87531^4\} + 4\{875321^2\} + \\
& 3\{87532^2\} + 4\{8753^21\} + 3\{87541^3\} + 5\{875421\} + 3\{87543\} + \{875^21^2\} + \\
& 2\{875^22\} + \{87621^4\} + \{8762^21^2\} + 2\{87631^3\} + 5\{876321\} + 2\{8763^2\} + \\
& 4\{87641^2\} + 3\{87642\} + 2\{87651\} + \{87^221^3\} + \{87^22^21\} + \{87^231^2\} + 2\{87^232\} + \\
& \{87^241\} + \{87^25\} + 3\{87^231^2\} + 2\{874321^2\} + \{87432^2\} + 3\{8743^21\} + 2\{87^2421\} + \\
& 3\{87^243\} + \{87^252\} + 4\{87^2531^3\} + 4\{87^25321\} + 3\{87^2541^2\} + 3\{87^2542\} + \{87^2621^3\} + \\
& \{87^262^21\} + 4\{87^2631^2\} + 2\{87^2632\} + 3\{87^2641\} + \{87^271^4\} + \{87^2721^2\} + 2\{87^272^2\} + \\
& \{87^2731\} + \{87^274\} + \{87^31^3\} + \{93^51^3\} + \{943^41^2\} + \{943^42\} + 2\{94^23^31\} + \{94^33^2\} + \\
& \{953^31^4\} + \{953^321^2\} + \{953^32^2\} + \{953^41\} + \{9543^21^3\} + 3\{9543^221\} + \{9543^3\} + \\
& 2\{954^231^2\} + 2\{954^232\} + \{954^31\} + \{95^231^5\} + \{95^2321^3\} + 2\{95^232^21\} + \\
& \{95^23^21^2\} + 2\{95^23^22\} + \{95^241^4\} + 3\{95^2421^2\} + 2\{95^242^2\} + 2\{95^2431\} + \\
& \{95^251\} + \{95^33\} + 2\{963^31^3\} + 2\{963^321\} + 2\{963^4\} + \{964321^3\} + \{96432^21\} + \\
& 5\{9643^21^2\} + 4\{9643^22\} + 2\{964^221^2\} + 2\{964^22^2\} + 5\{964^231\} + 2\{964^3\} + \\
& 2\{96531^4\} + 5\{965321^2\} + 3\{96532^2\} + 6\{9653^21\} + 3\{96541^3\} + 7\{965421\} + \\
& 3\{96543\} + 2\{965^21^2\} + \{965^22\} + \{96^22^3\} + 4\{96^231^3\} + 4\{96^2321\} + 2\{96^23^2\} + \\
& 4\{96^241^2\} + 4\{96^242\} + \{96^251\} + \{96^3\} + \{973^21^5\} + \{973^221^3\} + \{973^22^21\} + \\
& \{973^31^2\} + 3\{973^32\} + 2\{97431^4\} + 4\{974321^2\} + 3\{97432^2\} + 6\{9743^21\} + \\
& 4\{974^21^3\} + 6\{974^221\} + 3\{974^23\} + \{9751^6\} + 2\{97521^4\} + 3\{9752^21^2\} + \\
& \{9752^3\} + 4\{97531^3\} + 9\{975321\} + 6\{9753^2\} + 6\{97541^2\} + 6\{97542\} + \\
& 3\{975^21\} + \{9761^5\} + 3\{97621^3\} + 3\{9762^21\} + 6\{97631^2\} + 6\{97632\} + \\
& 5\{97641\} + \{9765\} + 2\{97^221^2\} + 4\{97^231\} + \{97^24\} + \{983^21^4\} + 2\{983^221^2\} + \\
& \{983^22^2\} + 2\{983^31\} + \{98421^4\} + \{9842^21^2\} + 4\{98431^3\} + 7\{984321\} + \\
& 2\{9843^2\} + 4\{984^21^2\} + 4\{984^22\} + \{9851^5\} + 3\{98521^3\} + 4\{9852^21\} + \\
& 7\{98531^2\} + 6\{98532\} + 5\{98541\} + \{985^2\} + 2\{9861^4\} + 5\{98621^2\} + 3\{9862^2\} + \\
& 5\{98631\} + 2\{9864\} + \{9871^3\} + 3\{98721\} + \{9873\} + \{98^22\} + \{931^6\} + \\
& \{932^21^2\} + \{93^22^21\} + 3\{93^23\} + \{9^241^5\} + 2\{9^2421^3\} + 2\{9^242^21\} + 3\{9^2431^2\} + \\
& 3\{9^2432\} + \{9^24^21\} + 3\{9^2521^2\} + \{9^252^2\} + 5\{9^2531\} + \{9^254\} + \{9^261^3\} + \\
& 2\{9^2621\} + 2\{9^263\} + 2\{9^271^2\} + \{103^51^2\} + \{1043^321^2\} + \{1043^41\} + \{104^23^221\} + \\
& 2\{104^23^3\} + \{104^332\} + 2\{1053^31^3\} + 2\{1053^321\} + \{1054321^3\} + \{105432^21\} + \\
& 3\{10543^21^2\} + 3\{10543^22\} + \{1054^221^2\} + \{1054^22^2\} + 4\{1054^231\} + \{1054^3\} + \\
& 2\{105^231^4\} + 3\{105^2321^2\} + 3\{105^232^2\} + \{105^23^21\} + 2\{105^241^3\} + 4\{105^2421\} + \\
& 2\{105^243\} + \{105^32\} + \{1063^221^3\} + \{1063^22^21\} + 4\{1063^31^2\} + \{1063^32\} + \\
& \{106431^4\} + 5\{1064321^2\} + 2\{106432^2\} + 7\{10643^21\} + 2\{1064^21^3\} + 6\{1064^221\} + \\
& 5\{1064^23\} + \{106521^4\} + 2\{10652^21^2\} + \{10652^3\} + 6\{106531^3\} + 9\{1065321\} + \\
& 2\{10653^2\} + 6\{106541^2\} + 6\{106542\} + \{1065^21\} + 2\{106^221^3\} + 2\{106^22^21\} + \\
& 7\{106^231^2\} + 3\{106^232\} + 4\{106^241\} + 2\{1073^21^4\} + 3\{1073^221^2\} + 2\{1073^22^2\} + \\
& 2\{1073^31\} + \{107421^4\} + 2\{10742^21^2\} + \{10742^3\} + 6\{107431^3\} + 9\{1074321\} + \\
& 5\{10743^2\} + 7\{1074^21^2\} + 5\{1074^22\} + 2\{10751^5\} + 5\{107521^3\} + 6\{10752^21\} + \\
& 8\{107531^2\} + 9\{107532\} + 7\{107541\} + 2\{1075^2\} + 2\{10761^4\} + 6\{107621^2\} + \\
& 3\{10762^2\} + 7\{107631\} + 2\{10764\} + \{107^21^3\} + 2\{107^221\} + 3\{107^23\} + \\
& \{108321^4\} + \{1083^23\} + 4\{1083^21^3\} + 4\{1083^221\} + \{10841^5\} + 4\{108421^3\} + \\
& 4\{10842^21\} + 9\{108431^2\} + 6\{108432\} + 6\{1084^21\} + 4\{10851^4\} + 7\{108521^2\} +
\end{aligned}$$

TABLE II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$

See page 161 for Explanation of Tables

$$\begin{aligned}
& 6\{10852^2\} + 7\{108531\} + 3\{10854\} + 4\{10861^3\} + 6\{108621\} + 2\{10863\} + \\
& \{10871^2\} + 2\{10872\} + \{10931^5\} + 2\{109321^3\} + 2\{10932^21\} + 2\{1093^21^2\} + \\
& 2\{1093^22\} + 2\{10941^4\} + 5\{109421^2\} + 3\{10942^2\} + 5\{109431\} + \{1094^2\} + \\
& 2\{10951^3\} + 5\{109521\} + 3\{10953\} + 2\{10961^2\} + 2\{10962\} + \{10971\} + \\
& 2\{10^231^4\} + \{10^2321^2\} + 2\{10^232^2\} + 2\{10^241^3\} + 2\{10^2421\} + \{10^243\} + 2\{10^252\} + \\
& \{10^27\} + \{113^41^4\} + \{1143^31^3\} + \{1143^321\} + 2\{114^23^21^2\} + \{114^23^22\} + 2\{114^331\} + \\
& \{114^4\} + \{1153^21^5\} + \{1153^221^3\} + \{1153^22^21\} + \{1153^31^2\} + \{1153^32\} + \{115431^4\} + \\
& 3\{1154321^2\} + 2\{115432^2\} + 3\{11543^21\} + 2\{1154^21^3\} + 4\{1154^221\} + 2\{1154^23\} + \\
& \{115^21^6\} + \{115^221^4\} + 2\{115^22^21^2\} + \{115^22^3\} + \{115^231^3\} + 4\{115^2321\} + \\
& 2\{115^23^2\} + 2\{115^241^2\} + 3\{115^242\} + \{115^31\} + 2\{1163^21^4\} + 3\{1163^221^2\} + \\
& \{1163^22^2\} + 2\{1163^31\} + \{116421^4\} + \{11642^21^2\} + \{11642^3\} + 6\{116431^3\} + \\
& 8\{1164321\} + 3\{11643^2\} + 6\{1164^21^2\} + 6\{1164^22\} + \{11651^5\} + 4\{116521^3\} + \\
& 5\{11652^21\} + 8\{116531^2\} + 5\{116532\} + 5\{116541\} + 3\{116^21^4\} + 4\{116^221^2\} + \\
& 3\{116^22^2\} + 3\{116^231\} + \{116^24\} + \{11731^6\} + \{117321^4\} + 2\{11732^21^2\} + \\
& 2\{1173^21^3\} + 4\{1173^221\} + \{1173^3\} + 2\{11741^5\} + 6\{117421^3\} + 5\{11742^21\} + \\
& 9\{117431^2\} + 7\{117432\} + 5\{1174^21\} + 2\{11751^4\} + 8\{117521^2\} + 4\{11752^2\} + \\
& 9\{117531\} + 3\{11754\} + 3\{11761^3\} + 5\{117621\} + 2\{11763\} + 2\{117^21^2\} + \\
& \{117^22\} + 2\{11831^5\} + 3\{118321^3\} + 3\{11832^21\} + 4\{1183^21^2\} + 2\{1183^22\} + \\
& 4\{11841^4\} + 8\{118421^2\} + 5\{11842^2\} + 6\{118431\} + 2\{1184^2\} + 4\{11851^3\} + \\
& 7\{118521\} + 3\{11853\} + 2\{11861^2\} + 2\{11862\} + \{11871\} + \{1191^7\} + \{11921^5\} + \\
& \{1192^21^3\} + \{1192^31\} + \{11931^4\} + 4\{119321^2\} + \{11932^2\} + 3\{1193^21\} + \\
& 3\{11941^3\} + 5\{119421\} + 2\{11943\} + 3\{11951^2\} + 2\{11952\} + \{11961\} + \\
& \{111021^4\} + \{11102^21^2\} + \{11102^3\} + \{111031^3\} + 2\{1110321\} + \{111041^2\} + \\
& \{111042\} + \{111051\} + \{11231^2\} + \{123^41^3\} + \{1243^221^3\} + \{1243^31^2\} + \{124^2321^2\} + \\
& 2\{124^23^21\} + \{124^221\} + 2\{124^23\} + 2\{1253^21^4\} + 2\{1253^221^2\} + \{1253^22^2\} + \\
& \{125421^4\} + \{12542^21^2\} + 3\{125431^3\} + 4\{1254321\} + \{12543^2\} + 4\{1254^21^2\} + \\
& 3\{1254^22\} + \{125^21^5\} + 2\{125^221^3\} + 3\{125^22^21\} + \{125^231^2\} + 3\{125^232\} + \\
& 2\{125^241\} + \{125^3\} + \{126321^4\} + \{12632^21^2\} + \{12632^3\} + 4\{1263^21^3\} + \\
& 2\{1263^221\} + \{12641^5\} + 4\{126421^3\} + 4\{12642^21\} + 8\{126431^2\} + 4\{126432\} + \\
& 5\{1264^21\} + 3\{12651^4\} + 6\{126521^2\} + 4\{12652^2\} + 4\{126531\} + \{12654\} + \\
& 3\{126^21^3\} + 2\{126^221\} + 2\{12731^5\} + 4\{127321^3\} + 3\{12732^21\} + 2\{1273^21^2\} + \\
& 2\{1273^22\} + 4\{12741^4\} + 8\{127421^2\} + 3\{12742^2\} + 6\{127431\} + \{1274^2\} + \\
& 3\{12751^3\} + 5\{127521\} + 3\{12753\} + 2\{12761^2\} + \{12762\} + \{127^21\} + \{12821^5\} + \\
& \{1282^21^3\} + \{1282^31\} + 4\{12831^4\} + 4\{128321^2\} + 3\{12832^2\} + \{1283^21\} + \\
& 4\{12841^3\} + 6\{128421\} + \{12843\} + 2\{12851^2\} + 2\{12852\} + \{1291^6\} + \{12921^4\} + \\
& 2\{1292^21^2\} + \{1292^3\} + 2\{12931^3\} + 2\{129321\} + \{1293^2\} + 2\{12941^2\} + \{12942\} + \\
& \{12951\} + \{12101^5\} + \{121021^3\} + \{12102^21\} + \{121032\} + \{133^31^5\} + \{1343^21^4\} + \\
& \{1343^221^2\} + 2\{134^231^3\} + \{134^2321\} + 2\{134^31^2\} + \{134^32\} + \{13531^6\} + \\
& \{135321^4\} + \{13532^21^2\} + \{1353^21^3\} + \{1353^221\} + \{13541^5\} + 3\{135421^3\} + \\
& 2\{13542^21\} + 3\{135431^2\} + 2\{135432\} + 2\{1354^21\} + 2\{135^221^2\} + \{135^22^2\} + \\
& 2\{135^231\} + \{135^24\} + 2\{13631^5\} + 3\{136321^3\} + 2\{13632^21\} + 2\{1363^21^2\} + \\
& 4\{13641^4\} + 6\{136421^2\} + 3\{13642^2\} + 3\{136431\} + \{1364^2\} + 2\{13651^3\} + \\
& 3\{136521\} + \{1371^7\} + \{13721^5\} + 2\{1372^21^3\} + \{1372^31\} + 2\{13731^4\} + \\
& 4\{137321^2\} + \{13732^2\} + \{1373^21\} + 4\{13741^3\} + 3\{137421\} + \{13743\} + \\
& 2\{13751^2\} + \{13752\} + \{1381^6\} + 2\{13821^4\} + 2\{1382^21^2\} + \{1382^3\} + 2\{13831^3\} + \\
& 2\{138321\} + \{13841^2\} + \{13842\} + \{13921^3\} + \{1392^21\} + \{13931^2\} + \{143^31^4\} + \\
& \{144321^4\} + \{1443^21^3\} + \{144^221^3\} + 2\{144^231^2\} + \{144^31\} + 2\{14531^5\} + \\
& 2\{145321^3\} + \{14532^21\} + 2\{14541^4\} + 3\{145421^2\} + \{14542^2\} + \{145431\} + \\
& \{145^221\} + \{145^23\} + \{14621^5\} + \{1462^21^3\} + \{1462^31\} + 3\{14631^4\} + 2\{146321^2\} + \\
& \{1463^22\} + 3\{14641^3\} + 2\{146421\} + \{1471^6\} + 2\{14721^4\} + 2\{1472^21^2\} + \\
& \{14731^3\} + \{147321\} + \{14741^2\} + \{1481^5\} + \{14821^3\} + \{1482^21\} + \{153^21^6\} + \\
& \{15431^5\} + \{154321^3\} + 2\{154^21^4\} + \{154^221^2\} + \{1551^7\} + \{15521^5\} + \{1552^21^3\} + \\
& \{15531^4\} + \{155321^2\} + \{15541^3\} + \{155421\} + \{1561^6\} + 2\{15621^4\} + \{1562^21^2\} + \\
& \{1562^3\} + \{15631^3\} + \{15721^3\} + \{163^21^5\} + \{16421^5\} + \{16431^4\} + \{164^21^3\} +
\end{aligned}$$

TABLE II. Antisymmetric Outer Plethysms $\{n\} \otimes \{1^m\}$
 See page 161 for Explanation of Tables

$$\{1651^6\} + \{16521^4\} + \{1652^21^2\} + \{1661^5\} + \{1731^7\} + \{1741^6\} + \{17421^4\} + \\ \{1831^6\} + \{191^8\}.$$

$\{n\} \otimes \{1^{10}\}$

$$\{2\} \otimes \{1^{10}\} = \{5^4\} + \{65^231\} + \{6^242^2\} + \{75421^2\} + \{762^31\} + \{84^21^4\} + \{852^21^3\} + \{9421^5\} + \\ \{1031^7\} + \{111^9\}.$$

$\{n\} \otimes \{1^{11}\}$

$$\{2\} \otimes \{1^{11}\} = \{65^31\} + \{6^2532\} + \{75^231^2\} + \{7642^21\} + \{7^22^4\} + \{85421^3\} + \{862^31^2\} + \\ \{94^21^5\} + \{952^21^4\} + \{10421^6\} + \{1131^8\} + \{121^{10}\}.$$

$\{n\} \otimes \{1^{12}\}$

$$\{2\} \otimes \{1^{12}\} = \{6^25^22\} + \{6^33^2\} + \{75^31^2\} + \{765321\} + \{7^242^3\} + \{85^231^3\} + \{8642^21^2\} + \\ \{872^41\} + \{95421^4\} + \{962^31^3\} + \{104^21^6\} + \{1052^21^5\} + \{11421^7\} + \{1231^9\} + \\ \{131^{11}\}.$$

$\{n\} \otimes \{1^{13}\}$

$$\{2\} \otimes \{1^{13}\} = \{6^353\} + \{765^221\} + \{76^23^21\} + \{7^2532^2\} + \{85^31^3\} + \{865321^2\} + \{8742^31\} + \\ \{8^22^5\} + \{95^231^4\} + \{9642^21^3\} + \{972^41^2\} + \{105421^5\} + \{1062^31^4\} + \{114^21^7\} + \\ \{1152^21^6\} + \{12421^8\} + \{1331^{10}\} + \{141^{12}\}.$$

$\{n\} \otimes \{1^{14}\}$

$$\{2\} \otimes \{1^{14}\} = \{6^44\} + \{76^2531\} + \{7^25^22^2\} + \{7^263^22\} + \{865^221^2\} + \{86^23^21^2\} + \{87532^21\} + \\ \{8^242^4\} + \{95^31^4\} + \{965321^3\} + \{9742^31^2\} + \{982^51\} + \{105^231^5\} + \{10642^21^4\} + \\ \{1072^41^3\} + \{115421^6\} + \{1162^31^5\} + \{124^21^8\} + \{1252^21^7\} + \{13421^9\} + \{1431^{11}\} + \\ \{151^{13}\}.$$