

The lists "Valency 66" and "Valency 65" below contain data on nonisomorphic strongly regular graphs given in the Magma file 'SRG144'. The first list relates to 43 SRGs with parameters (144,66,30,30), the second to 78 SRGs with parameters (144,65,28,30). For each graph we first give the order of the full automorphism group, and then the multiset of the "SmallGroups" catalogue numbers of its regular subgroups.

Valency 66

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[*10368,{*11516,1164,1324,1334,1364,1434,1444,1454,146,
150,151,1538,1544,159,160,1624,167,18633,1916,1928,195*}*],
[*10368,{*11516,1164,1324,1334,1364,1438,14412,1458,1463,1503,1513,
15324,1548,1593,1603,16212,1673,1836,18617,1883,1903,1914,19211,1953*}*],
[*5184,{*1154,116,132,133,136,143,144,145,153,154,1865,191,192*}*],
[*5184,{*1154,116,132,133,136,1432,1443,1452,1533,1542,1833,1863,191,1922*}*],
[*3456,{*632,642,658,662,672,762,772,782,792,848,123,1494,15110,15413,155,
1662,16710,1692,1702,1724,176,1774,178,1792,1882,193,1965,197*}*],
[*3456,{*632,642,658,662,672,762,772,782,792,848,1232,1292,1492,1516,1545,
1662,1676,1694,1704,17212,176,1778,178,1794,1897,1933,1965,197*}*],
[*190080,{*182*}*],
[*1728,{*1154,1364,1442,151,1534,1544,1622,167,1866*}*],
[*576,{*1434,1448,1454,1462,1502,1512,15316,1544,1592,1602,1628,1672,19210,1952*}*],
[*576,{*644,794,1514,1544,1674*}*],
[*576,{*644,794,1514,1544,1674*}*],
[*576,{*642,652,792,842,1512,1542,1672,170,1722,1772,179*}*],
[*144,{*172*}*],
[*144,{*172*}*],
[*576,{*654,844,1514,1544,1674*}*],
[*576,{*654,844,1514,1544,1674*}*],
[*576,{*1154,1364,151,1544,167,1866*}*],
[*576,{*642,652,792,842,1512,1542,1672,170,1722,1772,179*}*],
[*1152,{*632,642,658,662,672,762,772,782,792,848,1494,15110,15413,1662,16710,
1694,1704,17212,176,1778,178,1794,1968,197*}*],
[*576,{*1696,1706,17224,176,17712,178,1796,19611,197*}*],
[*1152,{*632,642,658,662,672,762,772,782,792,848,1494,15110,15413,1662,16710,
1694,1704,17212,176,1778,178,1794,1968,197*}*],
[*576,{*1496,15112,15424,1662,16712,19611,197*}*],
[*1152,{*11516,1164,1324,1334,1364,1434,1444,1454,146,
150,151,1538,1544,159,160,1624,167,18633,1916,1928,195*}*],
[*1152,{*11516,1164,1324,1334,1364,1434,1444,1454,146,
150,151,1538,1544,159,160,1624,167,18633,1916,1928,195*}*],
[*576,{*18648,1918,19211,195*}*],
[*1728,{*1158,1164,1866*}*],
[*576,{*1152,1362,151,1542,167*}*],
[*576,{*642,652,662,772,792,842,1512,1542,1672*}*],
[*576,{*1152,1362,151,1542,167*}*],
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$[*576, \{ *115^2, 136^2, 151, 154^2, 167^* \}^*]$,
 $[*576, \{ *115^2, 136^2, 151, 154^2, 167^* \}^*]$,
 $[*576, \{ *64^2, 65^2, 66^2, 77^2, 79^2, 84^2, 151^2, 154^2, 167^2^* \}^*]$,
 $[*576, \{ *115^2^* \}^*]$,
 $[*576, \{ *115^2^* \}^*]$,
 $[*576, \{ *64, 79, 116^2, 132^2^* \}^*]$,
 $[*576, \{ *64, 79, 116^2, 132^2^* \}^*]$,
 $[*576, \{ *115^8, 116^4, 186^6^* \}^*]$,
 $[*576, \{ *65, 84, 191^4^* \}^*]$,
 $[*576, \{ *132^4, 133^4, 136^4, 191^6^* \}^*]$,
 $[*576, \{ *65, 84, 191^4^* \}^*]$,
 $[*576, \{ *132^4, 133^4, 136^4, 191^6^* \}^*]$,
 $[*288, \{ *143, 144^2, 145, 153^2, 154, 192^* \}^*]$,
 $[*288, \{ *170, 172^4, 177^2, 179^* \}^*]$.

Valency 65

$[*3456, \{ *115^{16}, 16^4, 132^4, 133^4, 136^4, 143^8, 144^{12}, 145^8, 146^3, 150^3, 151^3, 153^{24}, 154^8, 159^3, 160^3, 162^{12}, 167^3, 186^{33}, 191^6, 192^{18}, 195^3^* \}^*]$,
 $[*31104, \{ *115^{16}, 116^4, 132^4, 133^4, 136^4, 143^4, 144^4, 145^4, 146, 150, 151, 153^8, 154^4, 159, 160, 162^4, 167, 183^2, 186^{17}, 188, 190, 191^4, 192^5, 195^* \}^*]$,
 $[*15552, \{ *115^4, 116, 132, 133, 136, 143, 144, 145, 153, 154, 183, 186^3, 191, 192^* \}^*]$,
 $[*1728, \{ *115^4, 116, 132, 133, 136, 143^2, 144^3, 145^2, 153^3, 154^2, 186^5, 191, 192^2^* \}^*]$,
 $[*1152, \{ *63^2, 64^2, 65^8, 66^2, 67^2, 76^2, 77^2, 78^2, 79^2, 84^8, 149^4, 151^{10}, 154^{13}, 166^2, 167^{10}, 169^4, 170^4, 172^{12}, 176, 177^8, 178, 179^4, 196^8, 197^* \}^*]$,
 $[*10368, \{ *63^2, 64^2, 65^8, 66^2, 67^2, 76^2, 77^2, 78^2, 79^2, 84^8, 123^3, 129^2, 149^2, 151^6, 154^5, 155, 166^2, 167^6, 169^2, 170^2, 172^4, 176, 177^4, 178, 179^2, 184, 188, 189^3, 193^3, 194, 196^3, 197^* \}^*]$,
 $[*1440, \{ *182^* \}^*]$,
 $[*1728, \{ *115^4, 136^4, 144^2, 151, 153^4, 154^4, 162^2, 167, 186^6^* \}^*]$,
 $[*864, \{ *144^4, 151^2, 153^8, 154^4, 162^4, 167^2^* \}^*]$,
 $[*288, \{ *151^2, 154^4, 167^2^* \}^*]$,
 $[*576, \{ *143^4, 144^8, 145^4, 146^2, 150^2, 151^2, 153^{16}, 154^4, 159^2, 160^2, 162^8, 167^2, 192^{10}, 195^2^* \}^*]$,
 $[*288, \{ *192^{14}, 195^2^* \}^*]$,
 $[*288, \{ *65^2, 84^2^* \}^*]$,
 $[*288, \{ *64^2, 79^2^* \}^*]$,
 $[*288, \{ *65^2, 84^2^* \}^*]$,
 $[*288, \{ *64^2, 79^2^* \}^*]$,
 $[*576, \{ *64^4, 79^4, 151^4, 154^4, 167^4^* \}^*]$,
 $[*288, \{ *151^2, 154^4, 167^2^* \}^*]$,
 $[*576, \{ *64^4, 79^4, 151^4, 154^4, 167^4^* \}^*]$,
 $[*288, \{ *151^2, 154^4, 167^2^* \}^*]$,
 $[*576, \{ *64^2, 65^2, 79^2, 84^2, 51^2, 154^2, 167^2, 170, 172^2, 177^2, 179^* \}^*]$,
 $[*288, \{ *170, 172^4, 177^2, 179^* \}^*]$,

[*144,{*172*}*],
[*144,{*172*}*],
[*144,{*172*}*],
[*144,{*172*}*],
[*144,{*172*}*],
[*144,{*172*}*],
[*576,{*65⁴,84⁴,151⁴,154⁴,167⁴*}*],
[*288,{*151²,154⁴,167²*}*],
[*288,{*151²,154⁴,167²*}*],
[*576,{*65⁴,84⁴,151⁴,154⁴,167⁴*}*],
[*576,{*115⁴,136⁴,151,154⁴,167,186⁶*}*],
[*576,{*64²,65²,79²,84²,151²,154²,167²,170,172²,177²,179*}*],
[*288,{*170,172⁴,177²,179*}*],
[*576,{*169⁶,170⁶,172²⁴,176,177¹²,178,179⁶,196¹¹,197*}*],
[*1152,{*63²,64²,65⁸,66²,67²,76²,77²,78²,79²,84⁸,149⁴,151¹⁰,154¹³,166²,167¹⁰,
169⁴,170⁴,172¹²,176,177⁸,178,179⁴,196⁸,197*}*],
[*1152,{*63²,64²,65⁸,66²,67²,76²,77²,78²,79²,84⁸,149⁴,151¹⁰,154¹³,166²,167¹⁰,
169⁴,170⁴,172¹²,176,177⁸,178,179⁴,196⁸,197*}*],
[*576,{*149⁶,151¹²,154²⁴,166²,167¹²,196¹¹,197*}*],
[*288,{*196¹⁵,197*}*],
[*864,{*186⁸*}*],
[*288,{*186⁸*}*],
[*288,{*115⁴*}*],
[*1152,{*115¹⁶,116⁴,132⁴,133⁴,136⁴,143⁴,144⁴,145⁴,146,
150,151,153⁸,154⁴,159,160,162⁴,167,186³³,191⁶,192⁸,195*}*],
[*1152,{*115¹⁶,116⁴,132⁴,133⁴,136⁴,143⁴,144⁴,145⁴,146,
150,151,153⁸,154⁴,159,160,162⁴,167,186³³,191⁶,192⁸,195*}*],
[*576,{*186⁴⁸,191⁸,192¹¹,195*}*],
[*1728,{*115⁸,116⁴,186⁶*}*],
[*864,{*115⁴*}*],
[*288,{*151²,154⁴,167²*}*],
[*576,{*115²,136²,151,154²,167*}*],
[*576,{*64²,65²,66²,77²,79²,84²,151²,154²,167²*}*],
[*576,{*115²,136²,151,154²,167*}*],
[*288,{*136⁴*}*],
[*288,{*136⁴*}*],
[*576,{*115²,136²,151,154²,167*}*],
[*576,{*115²,136²,151,154²,167*}*],
[*288,{*151²,154⁴,167²*}*],
[*576,{*64²,65²,66²,77²,79²,84²,151²,154²,167²*}*],
[*288,{*115⁴*}*],
[*576,{*115²*}*],
[*288,{*115⁴*}*],
[*576,{*115²*}*],
[*288,{*64²,79²*}*],
[*288,{*132⁴*}*],

$[*576, \{ *64, 79, 116^2, 132^2 * \} *],$
 $[*288, \{ *64^2, 79^2 * \} *],$
 $[*288, \{ *132^4 * \} *],$
 $[*576, \{ *64, 79, 116^2, 132^2 * \} *],$
 $[*576, \{ *115^8, 116^4, 186^6 * \} *],$
 $[*576, \{ *65, 84, 191^4 * \} *],$
 $[*576, \{ *132^4, 133^4, 136^4, 191^6 * \} *],$
 $[*576, \{ *132^4, 133^4, 136^4, 191^6 * \} *],$
 $[*576, \{ *65, 84, 191^4 * \} *],$
 $[*144, \{ *192 * \} *],$
 $[*288, \{ *143, 144^2, 145, 153^2, 154, 192 * \} *],$
 $[*288, \{ *170, 172^4, 177^2, 179 * \} *],$
 $[*288, \{ *170, 172^4, 177^2, 179 * \} *],$
 $[*288, \{ *170, 172^4, 177^2, 179 * \} *].$