1a
 2a
 2b
 3a
 4a
 4b
 4c
 4d
 5a
 6a
 8a
 8b
 8c
 10a
 12a
 12b
 16a
 16c
 16d
 20a
 20a
 $-E(8) - E(8)^3 - E(8) - E(8)^3 - E(8) + E(8)^3 - E(8) + E(8)^3$ $-20 \quad 0 \quad 2 \quad 0 \quad 0 \quad 0 \quad 0 \quad 0 \quad -2 \quad 2*E(8) + 2*E(8)^3 \quad -2*E(8) - 2*E(8)^3 \quad 0 \quad 0 \quad 0$ $\frac{1}{1} + 0 \cdot x_2 + 0 \cdot x_3 + 0 \cdot x_4 + 1 \cdot x_5 + 1 \cdot x_6 + 1 \cdot x_7 + 1 \cdot x_8 + 1 \cdot x_9 + 1 \cdot x_{10} + 1 \cdot x_{11} + 1 \cdot x_{12} + 1 \cdot x_{13} + 1 \cdot x_{16} + 0 \cdot x_{17} + 0 \cdot x_{18} + 0 \cdot x_{19} + 0 \cdot x_{29} + 2 \cdot x_{21} + 2 \cdot x_{22} + 2 \cdot x_{21} + 2 \cdot$ $0 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11} + 0 \cdot \chi_{12} + 0 \cdot \chi_{13} + 0 \cdot \chi_{14} + 0 \cdot \chi_{15} + 0 \cdot \chi_{16} + 1 \cdot \chi_{17} + 1 \cdot \chi_{18} + 1 \cdot \chi_{19} + 1 \cdot \chi_{20} + 0 \cdot \chi_{21} + 0 \cdot \chi_{22} \\ \hline 0 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11} + 0 \cdot \chi_{11} + 0 \cdot \chi_{12} + 0 \cdot \chi_{13} + 0 \cdot \chi_{14} + 0 \cdot \chi_{15} + 0 \cdot \chi_{16} + 1 \cdot \chi_{17} + 1 \cdot \chi_{18} + 1 \cdot \chi_{19} + 1 \cdot \chi_{20} + 0 \cdot \chi_{21} + 0 \cdot \chi_{21} + 0 \cdot \chi_{22} \\ \hline 0 \cdot \chi_1 + 0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 0 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11} + 0 \cdot \chi_{12} + 0 \cdot \chi_{11} + 0 \cdot \chi_{12} + 0 \cdot \chi_{11} + 0 \cdot \chi_{11} + 0 \cdot \chi_{12} + 0 \cdot \chi_{11} + 0 \cdot \chi_{12} +$ $\frac{1}{0 \cdot v_1 + 0 \cdot v_2 + 0 \cdot v_3 + 0 \cdot v_4 + 0 \cdot v_5 + 0 \cdot v_6 + 1 \cdot v_7 + 1 \cdot v_8 + 1 \cdot v_{10} + 1 \cdot v_{11} + 1 \cdot v_{12} + 1 \cdot v_{13} + 1 \cdot v_{14} + 1 \cdot v_{15} + 1 \cdot v_{16} + 0 \cdot v_{17} + 0 \cdot v_{22}}{0 \cdot v_1 + 0 \cdot v_2 + 0 \cdot v_3 + 0 \cdot v_4 + 0 \cdot v_5 + 0 \cdot v_6 + 1 \cdot v_7 + 1 \cdot v_8 + 1 \cdot v_{10} + 1 \cdot v_{11} + 1 \cdot v_{12} + 1 \cdot v_{13} + 1 \cdot v_{14} + 1 \cdot v_{15} + 1 \cdot v_{16} + 0 \cdot v_{17} + 0 \cdot v_{22}}{0 \cdot v_1 + 0 \cdot v_2 + 0 \cdot v_3 + 0 \cdot v_4 + 0 \cdot v_5 + 0 \cdot v_6 + 1 \cdot v_7 + 1 \cdot v_8 + 1 \cdot v_{10} + 1 \cdot v_{11} + 1 \cdot v_{12} + 1 \cdot v_{13} + 1 \cdot v_{14} + 1 \cdot v_{15} + 1 \cdot v_{16} + 0 \cdot v_{17} + 0 \cdot v_{22} + 0 \cdot v_4 + 0 \cdot v_7 + 0 \cdot v_8 + 0 \cdot v_8 + 0 \cdot v_{17} + 0 \cdot v_{18} + 0 \cdot v_{19} + 0 \cdot v_$ $\frac{1}{11} \frac{1}{11} \frac$ $\frac{\cdot \chi_2 + 1 \cdot \chi_3 + 1 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 1 \cdot \chi_7 + 1 \cdot \chi_8 + 1 \cdot \chi_9 + 1 \cdot \chi_{10} + 0 \cdot \chi_{11} + 0 \cdot \chi_{12} + 0 \cdot \chi_{13} + 0 \cdot \chi_{14} + 0 \cdot \chi_{15} + 0 \cdot \chi_{16} + 0 \cdot \chi_{17} + 0 \cdot \chi_{18} + 0 \cdot \chi_{19} + 0 \cdot \chi_{20} + 0 \cdot \chi_{21} + 0$ $\frac{1}{0 \cdot \chi_2 + 0 \cdot \chi_3 + 0 \cdot \chi_4 + 0 \cdot \chi_5 + 0 \cdot \chi_6 + 1 \cdot \chi_7 + 0 \cdot \chi_8 + 0 \cdot \chi_9 + 0 \cdot \chi_{10} + 0 \cdot \chi_{11} + 1 \cdot \chi_{12} + 0 \cdot \chi_{13} + 0 \cdot \chi_{14} + 0 \cdot \chi_{15} + 0 \cdot \chi_{16} + 0 \cdot \chi_{17} + 0 \cdot \chi_{18} + 0 \cdot \chi_{19} + 0 \cdot \chi_{20} + 0 \cdot \chi_{21} + 0 \cdot \chi_{21$ $+1\cdot \chi_{2} + 0\cdot \chi_{3} + 0\cdot \chi_{4} + 0\cdot \chi_{5} + 0\cdot \chi_{6} + 1\cdot \chi_{7} + 1\cdot \chi_{8} + 0\cdot \chi_{9} + 0\cdot \chi_{10} + 0\cdot \chi_{11} + 0\cdot \chi_{12} + 0\cdot \chi_{13} + 0\cdot \chi_{14} + 0\cdot \chi_{15} + 0\cdot \chi_{16} + 0\cdot \chi_{17} + 0\cdot \chi_{18} + 0\cdot \chi_{19} + 0\cdot \chi_{20} + 0\cdot \chi_{21} + 0\cdot \chi_{22} +$

 $\overline{cup}([(1,68)(2,78)(3,49)(4,79)(5,42)(6,72)(7,53)(8,64)(9,38)(10,24)(11,15)(12,71)(13,55)(14,31)(16,73)(17,21)(19,77)(20,30)(22,75)(23,25)(26,29)(28,57)(32,45)(33,63)(34,62)(35,47)(36,58)(40,50)(41,44)(43,48)(51,61)(56,76)(59,74)(60,65)(67,69)(70,80), (1,50,68,40)(2,5,78,42)(3,77,49,19)(4,24,79,10)(6,11,72,15)(7,41,53,44)(8,55,64,13)(9,23,38,25)(12,17,71,21)(14,75,31,22)(16,62,73,34)(18,39)(20,28,30,57)(26,35,29,47)(27,54)(32,67,45,69)(33,48)(34,62)(35,47)(36,58)(40,50)(41,44)(43,48)(51,61)(56,76)(59,74)(60,65)(67,69)(70,80), (1,50,68,40)(2,5,78,42)(3,77,49,19)(4,24,79,10)(6,11,72,15)(7,41,53,44)(8,55,64,13)(9,23,38,25)(12,17,71,21)(14,75,31,22)(16,62,73,34)(18,39)(20,28,30,57)(26,35,29,47)(27,54)(32,67,45,69)(33,48)(34,62)(35,47)(36,58)(40,50)(41,44)(43,48)(51,61)(56,76)(59,74)(60,65)(67,69)(70,80), (1,50,68,40)(2,5,78,42)(3,77,49,19)(4,24,79,10)(6,11,72,15)(7,41,53,44)(8,55,64,13)(9,23,38,25)(12,17,71,21)(14,75,31,22)(16,62,73,34)(18,39)(20,28,30,57)(26,35,29,47)(27,54)(32,45)(33,43)(36,61,58,51)(37,49,19)(4,24,79,10)(6,11,72,15)(14,75,31,22)(16,62,73,34)(18,39)(20,28,30,57)(26,35,29,47)(27,54)(32,45)(33,49)(32,45$ $ext{out} p([(1,3)(2,6)(4,12)(5,11)(7,22)(8,23)(9,13)(10,21)(14,41)(15,42)(16,43)(17,24)(18,39)(19,40)(20,32)(25,64)(26,65)(27,66)(28,67)(29,60)(30,45)(31,44)(33,62)(34,63)(35,59)(36,58)(37,54)(38,55)(46,52)(47,74)(48,73)(49,68)(50,77)(51,61)(53,75)(56,76)(57,69)(70,80)(71,79)(72,78), \\ (1,29,3,60)(2,53,6,75)(4,55,12,38)(5,31,11,44)(7,72,22,78)(8,10,23,21)(9,79,13,71)(14,15,41,42)(16,32,43,20)(17,64,24,25)(18,46,39,52)(19,35,40,59)(26,49,65,68)(27,37,66,54)(28,33,67,62)(30,33,67,6$

Group([1,68)(2,78)(3,49)(4,79)(5,42)(6,73)(3,49)(4,79)(5,42)(6,73)(3,49)(4,79)(5,42)(6,73)(3,49)(4,79)(2,75)(2,39)(2,3

 $(3, 27)(22, 45, 78, 25)(24, 37, 48, 80)(28, 63)(33, 50, 62, 77)(34, 67)(35, 57, 59, 69)(39, 68, 56, 41)(47, 74), (1, 50, 53, 67, 25, 23, 66, 32, 3, 77, 75, 28, 64, 8, 27, 20)(2, 61, 4, 36, 7, 76, 13, 80, 6, 51, 12, 58, 22, 56, 9, 70)(5, 52, 60, 43, 33, 38, 40, 31, 11, 46, 29, 16, 62, 55, 19, 44)(10, 17, 37, 48, 26, 35, 72, 63, 21, 24, 54, 73, 65, 59, 78, 34)(14, 39, 68, 45, 69, 71, 74, 42, 41, 18, 49, 30, 57, 79, 47, 15)]) <math>\cong$ SL(2,9): C4

 $+0\cdot\chi_{2}+0\cdot\chi_{3}+0\cdot\chi_{4}+0\cdot\chi_{5}+0\cdot\chi_{6}+0\cdot\chi_{7}+1\cdot\chi_{8}+0\cdot\chi_{9}+0\cdot\chi_{10}+0\cdot\chi_{11}+0\cdot\chi_{12}+0\cdot\chi_{13}+0\cdot\chi_{14}+0\cdot\chi_{15}+0\cdot\chi_{16}+0\cdot\chi_{17}+0\cdot\chi_{21}$

 $oup([(1,38,31,12)(2,16,53,10)(3,55,44,4)(5,46,29,61)(6,43,75,21)(7,30,72,64)(8,66,32,36)(9,65,79,42)(11,52,60,51)(13,26,71,15)(14,18,49,76)(17,54,73,70)(20,58,23,27)(22,45,78,25)(24,37,48,80)(28,63)(33,50,62,77)(34,67)(35,57,59,69)(39,68,56,41)(47,74),\\ (1,50,53,67,25,23,66,32,37,75,28,64,8,27,20)(2,45,78,25)(24,37,48,80)(28,63)(33,50,62,77)(34,67)(35,57,59,69)(39,68,56,41)(47,74),\\ (1,50,53,67,25,23,66,32,37,75,28,64,8,27,20)(2,45,78,25)(24,37,48,80)(28,63)(33,50,62,77)(34,67)(35,57,59,69)(39,68,56,41)(47,74),\\ (1,50,53,67,25,23,66,32,37,75,28,64,8,27,20)(2,45,78,25)(24,37,48,80)(28,63)(33,50,62,77)(34,67)(35,57,59,69)(39,68,56,41)(47,74),\\ (1,50,53,67,25,23,66,32,37,75,28,64,8,27,20)(2,45,78,25)(24,37,48,80)(28,63)(33,50,62,77)(34,67)(35,57,59,69)(39,68,56,41)(47,74),\\ (1,50,53,67,25,23,66,32,37,75,28,64,8,27,20)(2,45,78,25)(24,37,48,80)(28,63)(33,50,62,77)(34,67)(35,57,59,69)(39,68,56,41)(47,74),\\ (1,50,53,67,25,23,66,32,37,75,28,64,8,27,20)(2,45,78,25)(24,37,48,80)(28,63)(33,50,62,77)(34,67)(35,57,59,69)(39,68,56,41)(47,74),\\ (1,50,53,67,25,23,66,32,37,75,28,64,8,27,20)(2,45,78,25)(24,37,48,80)(28,63)(33,50,62,77)(34,67)(35,67,25,23,66,32,37,77,75,28,64,8,27,20)(24,37,48,80)(28,63)(33,50,62,77)(34,67)(35,67,25,23,66,32,37,77,75,28,64,8,27,20)(24,37,48,8$

 $\widetilde{oup}([(1,38,31,12)(2,16,53,10)(3,55,44,4)(5,46,29,61)(6,43,75,21)(7,30,72,64)(8,66,32,36)(9,65,79,42)(11,52,60,51)(13,26,71,15)(14,18,49,76)(17,54,73,70)(20,58,23,27)(22,45,78,25)(24,37,48,80)(28,63)(33,50,62,77)(34,67)(35,57,59,69)(39,68,56,41)(47,74),(1,50,53,67,25,23,66,32,37,75,28,64,8,27,20)(2,61,4,36,7,76,13,80,6,51,12,58,22,56,9,70)(5,52,60,43,33,38,40,31,11,46,29,16,62,55,19,44)(10,17,37,48,26,35,72,63,21,24,54,73,65,59,78,34)(14,39,68,45,69,71,74,42,41,18,49,30,57,79,47,15)]) \cong SL(2,9) : C4$

3, 5, 5, 1