

----- g,n: 8,2

graphs: 105

----- Euler Characteristic (without resolving relations):

-----  $-2V_1^2 - 4V_1 \boxtimes V_1 + 1V_0 \boxtimes V_2 + 2V_0 \boxtimes V_1 \boxtimes V_1$  -----

----- edges: 8

graphs: 6

----- A3 case

graphs: 6

-----

ID: 23  $V_1^2$   
 $\mapsto$  ID 46

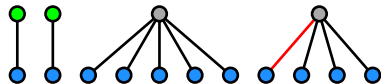
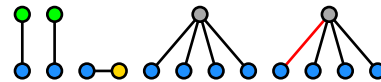
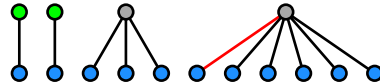
ID: 24  $V_1^2$   
 $\mapsto$  ID 34

ID: 25  $V_1^2$   
 $\mapsto$  ID 39

ID: 26  $V_1^2$   
 $\mapsto$  ID 41

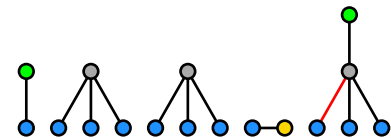
ID: 27  $V_1^2$   
 $\mapsto$  ID 44

ID: 28  $V_1^2$   
 $\mapsto$  ID 45

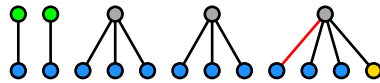


----- edges: 9    graphs: 28    -----  
 ----- A3 case    graphs: 17    -----

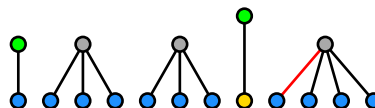
ID: 29  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 78



ID: 30  $V_1^2$   
 $\mapsto$  ID 73



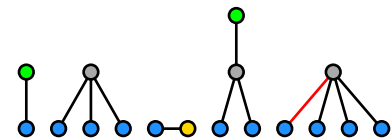
ID: 31  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 77



ID: 32  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 61



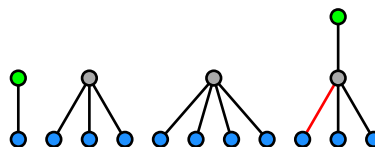
ID: 33  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 82



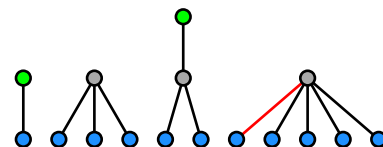
ID: 34  $V_1^2$   
 $\mapsto$  ID 24



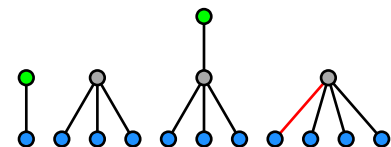
ID: 35  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 62



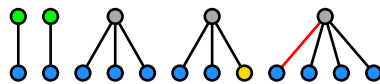
ID: 36  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 64



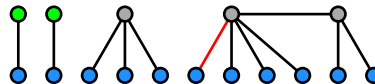
ID: 37  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 65



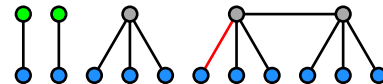
ID: 38  $V_1^2$   
 $\mapsto$  ID 84



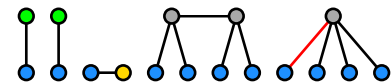
ID: 39  $V_1^2$   
 $\mapsto$  ID 25



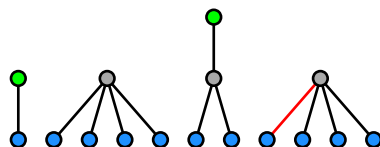
ID: 40  $V_1^2$   
 $\mapsto$  ID 66



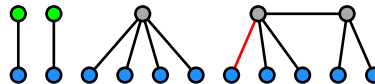
ID: 41  $V_1^2$   
 $\mapsto$  ID 26



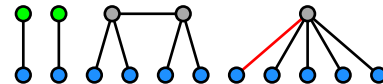
ID: 42  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 67



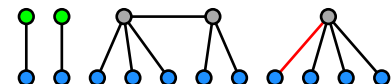
ID: 43  $V_1^2$   
 $\mapsto$  ID 68



ID: 44  $V_1^2$   
 $\mapsto$  ID 27

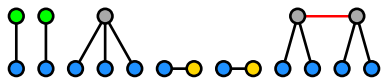


ID: 45  $V_1^2$   
 $\mapsto$  ID 28



----- B,Birr cases without weight 11 relations      graphs: 11 -----

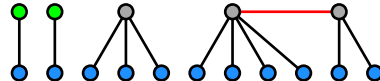
ID: 46  $V_1^2$   
 $\leftrightarrow$  ID 23



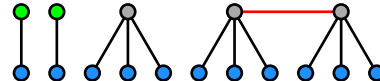
ID: 47  $V_1^2$   
 $\mapsto$  ID 86



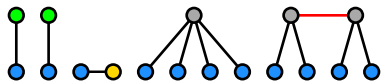
ID: 48  $V_1^2$   
 $\mapsto$  ID 89



ID: 49  $V_1^2$   
 $\mapsto$  ID 88



ID: 50  $V_1^2$   
 $\mapsto$  ID 91



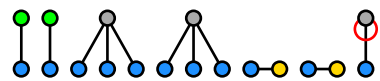
ID: 52  $V_1^2$   
 $\mapsto$  ID 94



ID: 51  $V_1^2$   
 $\mapsto$  ID 93



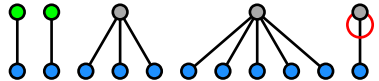
ID: 53  $V_1^2$   
 $\mapsto$  ID 100



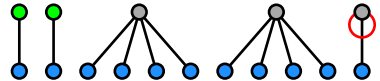
ID: 54  $V_1^2$   
 $\mapsto$  ID 101



ID: 55  $V_1^2$   
 $\mapsto$  ID 103

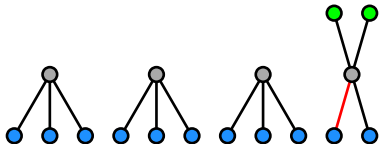


ID: 56  $V_1^2$   
 $\mapsto$  ID 104

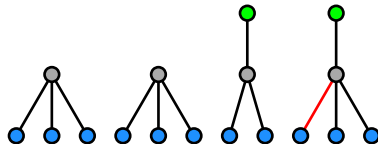


----- edges: 10      graphs: 48      -----  
 ----- A3 case      graphs: 12      -----

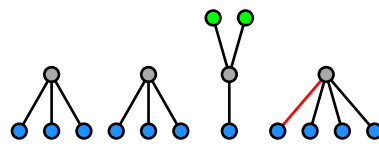
ID: 57  $V_2$   
 $\mapsto$  ID 113



ID: 58  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 115



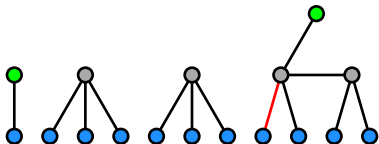
ID: 59  $V_2$   
 $\mapsto$  ID 114



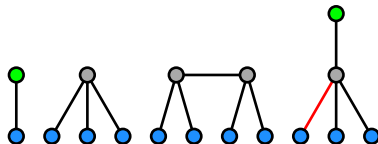
ID: 60  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 110



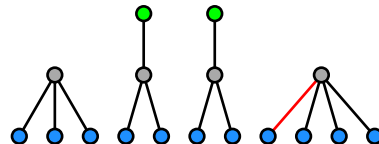
ID: 61  $V_1 \boxtimes V_1$   
 $\leftarrow$  ID 32



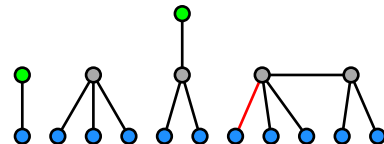
ID: 62  $V_1 \boxtimes V_1$   
 $\leftarrow$  ID 35



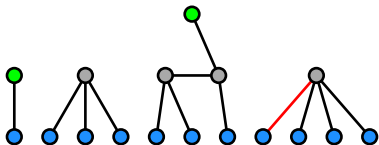
ID: 63  $V_2$   
 $\mapsto$  ID 118



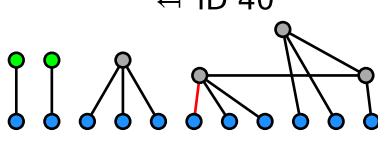
ID: 64  $V_1 \boxtimes V_1$   
 $\leftarrow$  ID 36



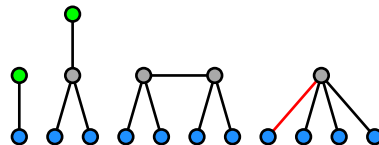
ID: 65  $V_1 \boxtimes V_1$   
 $\leftarrow$  ID 37



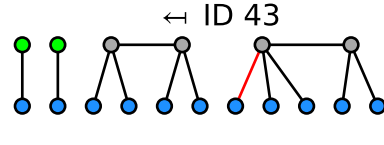
ID: 66  $V_1^2$   
 $\leftarrow$  ID 40



ID: 67  $V_1 \boxtimes V_1$   
 $\leftarrow$  ID 42



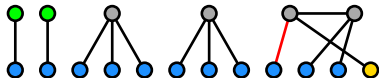
ID: 68  $V_1^2$   
 $\leftarrow$  ID 43



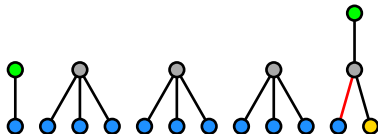
----- A2 case with weight 13 relations

relation groups: 2 -----

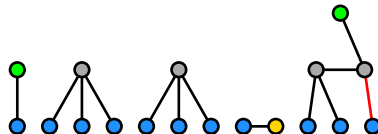
ID: 73  $V_1^2$   
 $\leftarrow$  ID 30



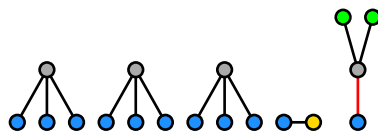
ID: 70  $V_1 \boxtimes V_1$



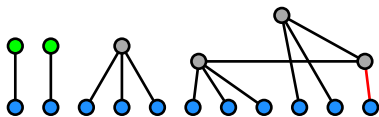
ID: 71  $V_1 \boxtimes V_1$   
redundant



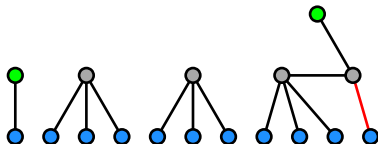
ID: 69  $V_2$   
redundant



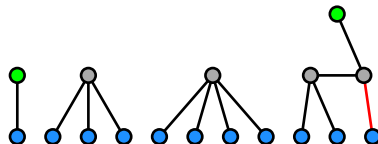
ID: 76  $V_1^2$   
 $\mapsto$  ID 112



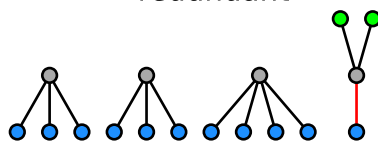
ID: 74  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 109



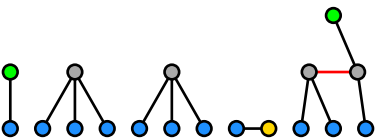
ID: 75  $V_1 \boxtimes V_1$   
redundant



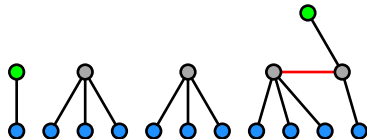
ID: 72  $V_2$   
redundant



ID: 78  $V_1 \boxtimes V_1$   
 $\leftrightarrow$  ID 29



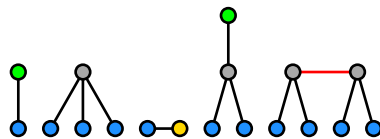
ID: 80  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 116



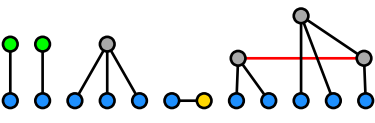
ID: 81  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 117



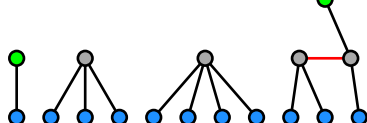
ID: 82  $V_1 \boxtimes V_1$   
 $\leftrightarrow$  ID 33



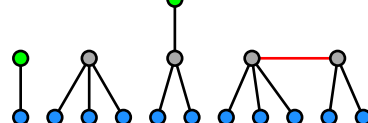
ID: 86  $V_1^2$   
 $\leftrightarrow$  ID 47



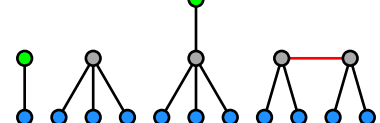
ID: 87  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 121



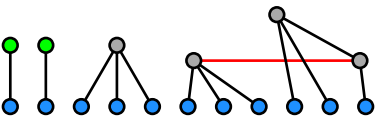
ID: 85  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 120



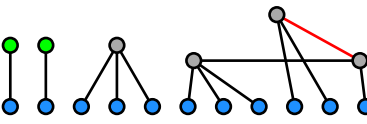
ID: 83  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 119



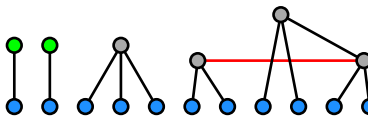
ID: 88  $V_1^2$   
 $\leftrightarrow$  ID 49



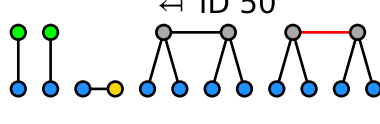
ID: 90  $V_1^2$   
 $\mapsto$  ID 122



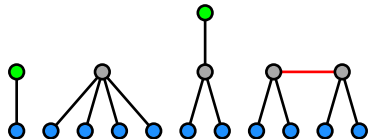
ID: 89  $V_1^2$   
 $\leftrightarrow$  ID 48



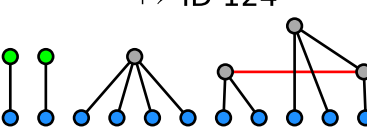
ID: 91  $V_1^2$   
 $\leftrightarrow$  ID 50



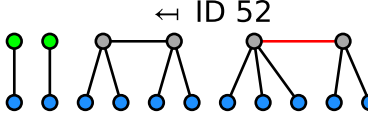
ID: 92  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 123



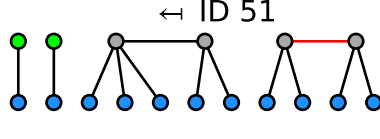
ID: 95  $V_1^2$   
 $\mapsto$  ID 124



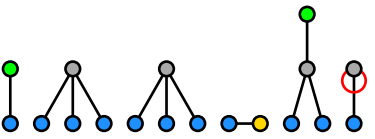
ID: 94  $V_1^2$   
 $\leftrightarrow$  ID 52



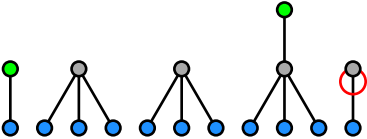
ID: 93  $V_1^2$   
 $\leftrightarrow$  ID 51



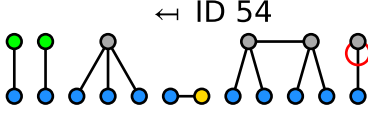
ID: 98  $V_1 \boxtimes V_1$



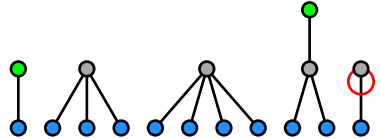
ID: 99  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 127



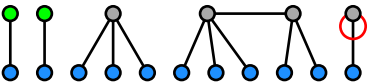
ID: 101  $V_1^2$   
 $\leftrightarrow$  ID 54



ID: 102  $V_1 \boxtimes V_1$   
 $\mapsto$  ID 128



ID: 103  $V_1^2$   
 $\leftrightarrow$  ID 55



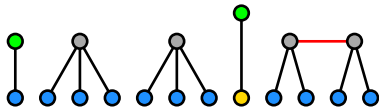
ID: 104  $V_1^2$   
 $\leftrightarrow$  ID 56



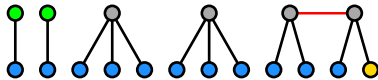
----- B,Birr cases with weight 11 relations

relation groups: 2 -----

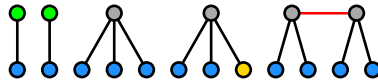
ID: 77  $V_1 \boxtimes V_1$   
 $\leftarrow$  ID 31



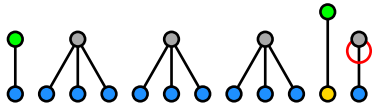
ID: 79  $V_1^2$   
redundant



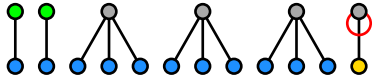
ID: 84  $V_1^2$   
 $\leftarrow$  ID 38



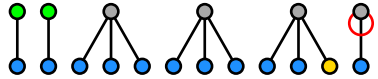
ID: 97  $V_1 \boxtimes V_1$



ID: 96  $V_1^2$   
redundant

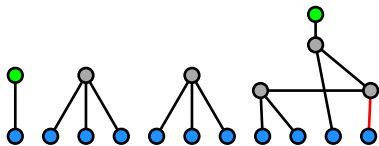


ID: 100  $V_1^2$   
 $\leftarrow$  ID 53

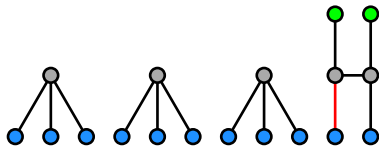


----- edges: 11    graphs: 23    -----  
 ----- A2 case with weight 13 relations    relation groups: 2 -----

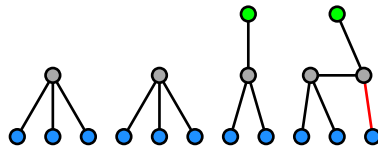
ID: 110  $V_1 \boxtimes V_1$   
 $\leftarrow$  ID 60



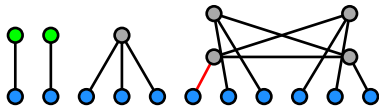
ID: 106  $V_1 \boxtimes V_1$



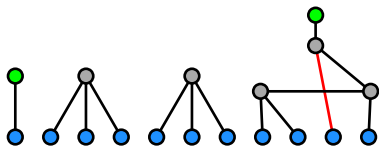
ID: 108  $V_1 \boxtimes V_1$   
 redundant



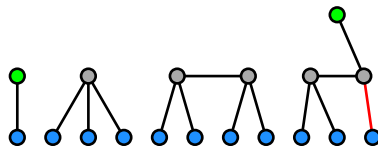
ID: 112  $V_{1^2}$   
 $\leftarrow$  ID 76



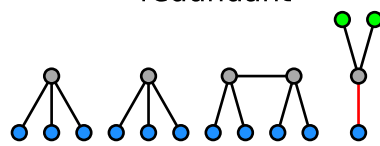
ID: 109  $V_1 \boxtimes V_1$   
 $\leftarrow$  ID 74



ID: 111  $V_1 \boxtimes V_1$   
 redundant



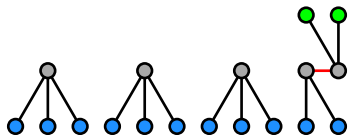
ID: 107  $V_2$   
 redundant



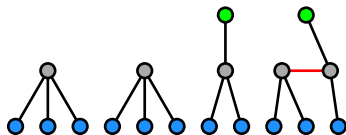


----- B,Birr cases without weight 11 relations      graphs: 16 -----

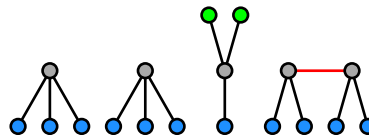
ID: 113  $V_2$   
 $\leftrightarrow$  ID 57



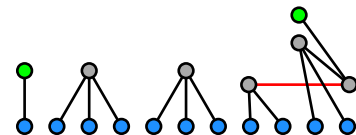
ID: 115  $V_1 \boxtimes V_1$   
 $\leftrightarrow$  ID 58



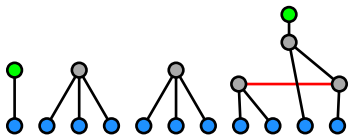
ID: 114  $V_2$   
 $\leftrightarrow$  ID 59



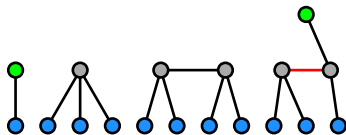
ID: 116  $V_1 \boxtimes V_1$   
 $\leftrightarrow$  ID 80



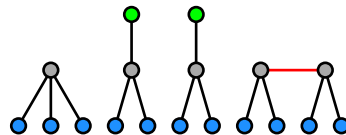
ID: 117  $V_1 \boxtimes V_1$   
 $\leftrightarrow$  ID 81



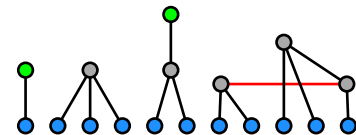
ID: 121  $V_1 \boxtimes V_1$   
 $\leftrightarrow$  ID 87



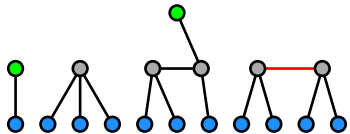
ID: 118  $V_2$   
 $\leftrightarrow$  ID 63



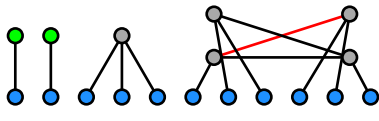
ID: 120  $V_1 \boxtimes V_1$   
 $\leftrightarrow$  ID 85



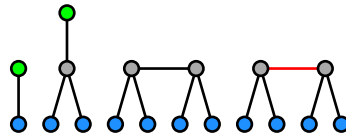
ID: 119  $V_1 \boxtimes V_1$   
 $\leftrightarrow$  ID 83



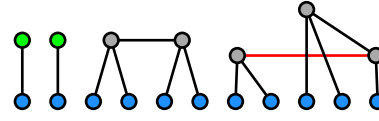
ID: 122  $V_1^2$   
 $\leftrightarrow$  ID 90



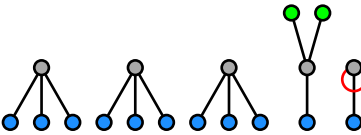
ID: 123  $V_1 \boxtimes V_1$   
 $\leftrightarrow$  ID 92



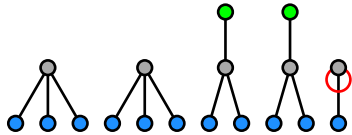
ID: 124  $V_1^2$   
 $\leftrightarrow$  ID 95



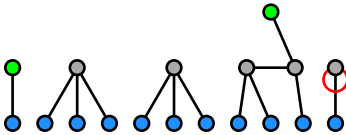
ID: 125  $V_2$



ID: 126  $V_2$



ID: 127  $V_1 \boxtimes V_1$   
 $\leftrightarrow$  ID 99



ID: 128  $V_1 \boxtimes V_1$   
 $\leftrightarrow$  ID 102

