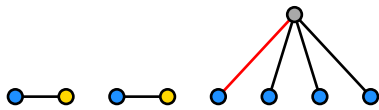
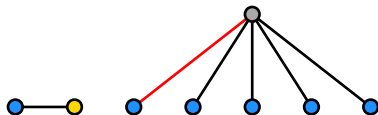


----- excess: 3 (g,n): (2, 11), (4, 8), (6, 5), (8, 2) graphs: 106 -----  
 ----- edges: 10-n graphs: 6 -----  
 --- A3 case graphs: 6 ---

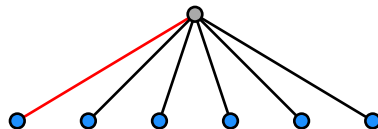
ID: 23  $V_1^n$   
 n: 5 2



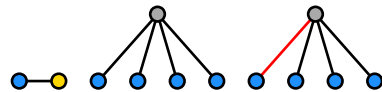
ID: 24  $V_1^n$   
 n: 5 2



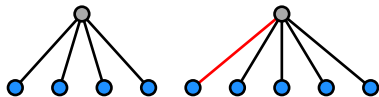
ID: 25  $V_1^n$   
 n: 5 2



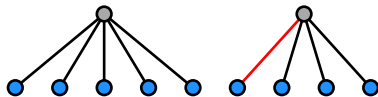
ID: 26  $V_1^n$   
 n: 2



ID: 27  $V_1^n$   
 n: 2

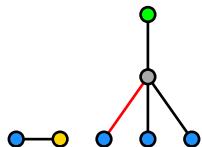


ID: 28  $V_1^n$   
 n: 2

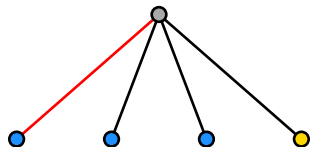


----- edges: 11-n      graphs: 28  
 --- A3 case      graphs: 17 ---

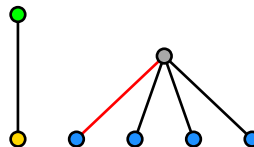
ID: 29  $V_1^{n-1} \boxtimes V_1$   
 n: 8 5 2



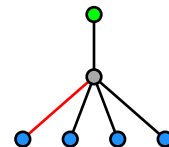
ID: 30  $V_1^n$   
 n: 8 5 2



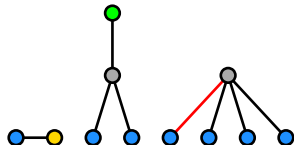
ID: 31  $V_1^{n-1} \boxtimes V_1$   
 n: 8 5 2



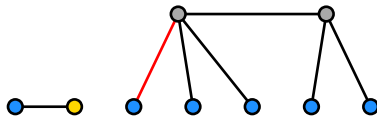
ID: 32  $V_1^{n-1} \boxtimes V_1$   
 n: 8 5 2



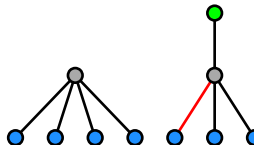
ID: 33  $V_1^{n-1} \boxtimes V_1$   
 n: 5 2



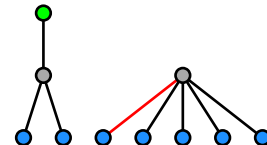
ID: 34  $V_1^n$   
 n: 5 2



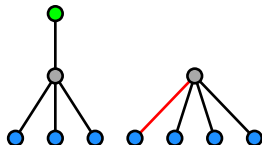
ID: 35  $V_1^{n-1} \boxtimes V_1$   
 n: 5 2



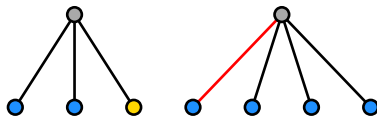
ID: 36  $V_1^{n-1} \boxtimes V_1$   
 n: 5 2



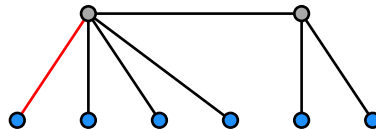
ID: 37  $V_1^{n-1} \boxtimes V_1$   
 n: 5 2



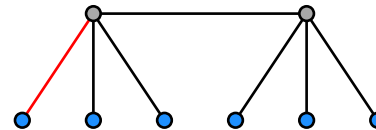
ID: 38  $V_1^n$   
 n: 5 2



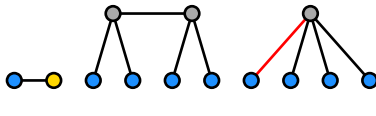
ID: 39  $V_1^n$   
 n: 5 2



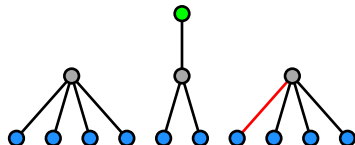
ID: 40  $V_1^n$   
 n: 5 2



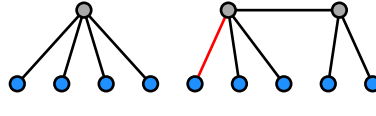
ID: 41  $V_1^n$   
 n: 2



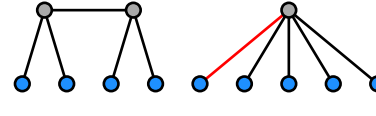
ID: 42  $V_1^{n-1} \boxtimes V_1$   
 n: 2



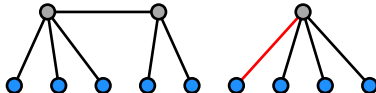
ID: 43  $V_1^n$   
 n: 2



ID: 44  $V_1^n$   
 n: 2

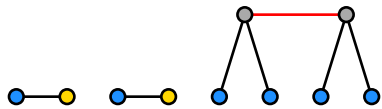


ID: 45  $V_1^n$   
 n: 2

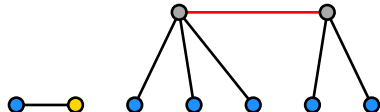


--- B,Birr cases without weight 11 relations      graphs: 11 ---

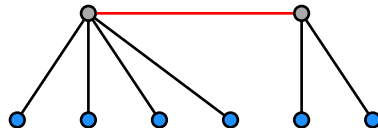
ID: 46  $V_1^n$   
n: 5 2



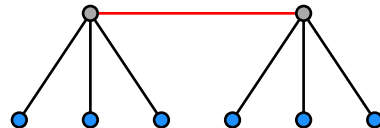
ID: 47  $V_1^n$   
n: 5 2



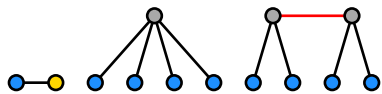
ID: 48  $V_1^n$   
n: 5 2



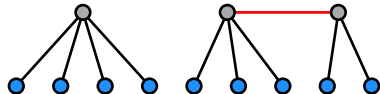
ID: 49  $V_1^n$   
n: 5 2



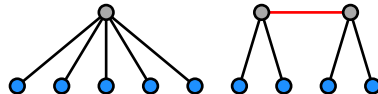
ID: 50  $V_1^n$   
n: 2



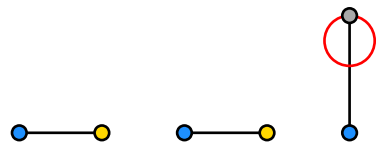
ID: 52  $V_1^n$   
n: 2



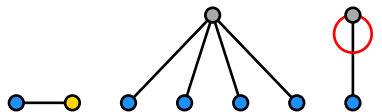
ID: 51  $V_1^n$   
n: 2



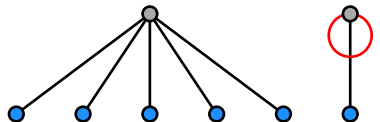
ID: 53  $V_1^n$   
n: 8 5 2



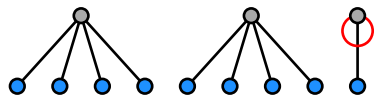
ID: 54  $V_1^n$   
n: 5 2



ID: 55  $V_1^n$   
n: 5 2

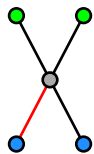


ID: 56  $V_1^n$   
n: 2

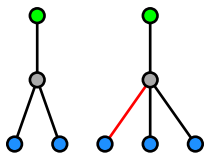


----- edges: 12-n      graphs: 48      -----  
 --- A3 case      graphs: 12 ---

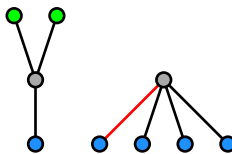
ID: 57  $V_{1^{n-2}} \boxtimes V_2$   
 n: 11 8 5 2



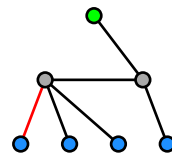
ID: 58  $V_{1^{n-2}} \boxtimes V_1 \boxtimes V_1$   
 n: 8 5 2



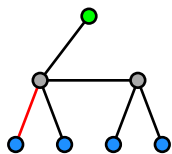
ID: 59  $V_{1^{n-2}} \boxtimes V_2$   
 n: 8 5 2



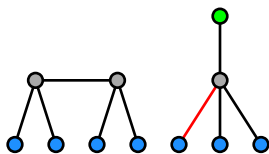
ID: 60  $V_{1^{n-1}} \boxtimes V_1$   
 n: 8 5 2



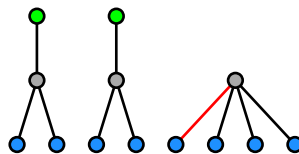
ID: 61  $V_{1^{n-1}} \boxtimes V_1$   
 n: 8 5 2



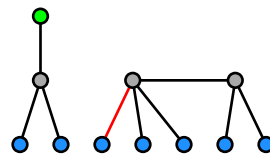
ID: 62  $V_{1^{n-1}} \boxtimes V_1$   
 n: 5 2



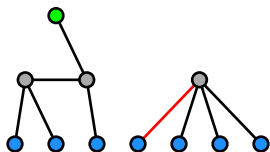
ID: 63  $V_{1^{n-2}} \boxtimes V_2$   
 n: 5 2



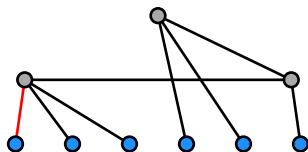
ID: 64  $V_{1^{n-1}} \boxtimes V_1$   
 n: 5 2



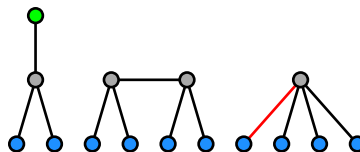
ID: 65  $V_{1^{n-1}} \boxtimes V_1$   
 n: 5 2



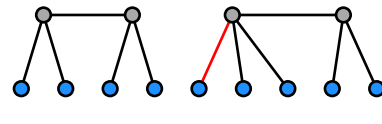
ID: 66  $V_{1^n}$   
 n: 5 2



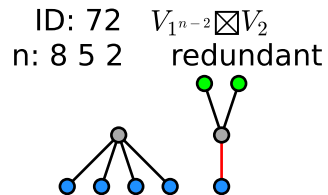
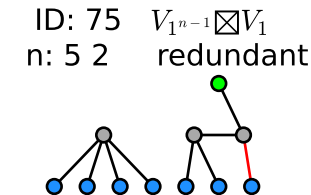
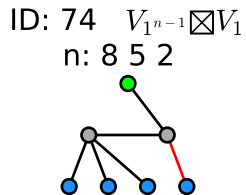
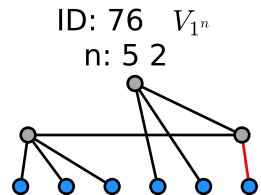
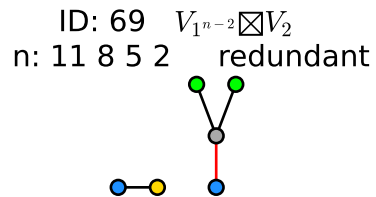
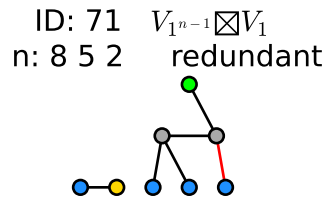
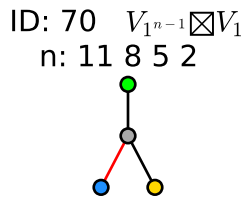
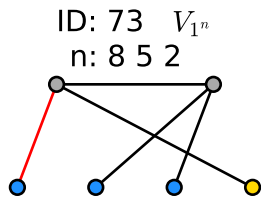
ID: 67  $V_{1^{n-1}} \boxtimes V_1$   
 n: 2



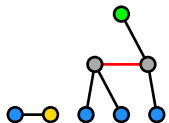
ID: 68  $V_{1^n}$   
 n: 2



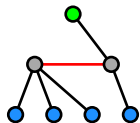
--- A2 case with weight 13 relations      relation groups: 2 ---



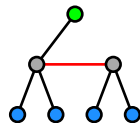
ID: 78  $V_1^{n-1} \boxtimes V_1$   
n: 8 5 2



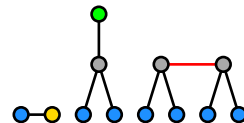
ID: 80  $V_1^{n-1} \boxtimes V_1$   
n: 8 5 2



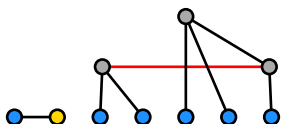
ID: 81  $V_1^{n-1} \boxtimes V_1$   
n: 8 5 2



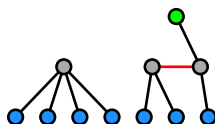
ID: 82  $V_1^{n-1} \boxtimes V_1$   
n: 5 2



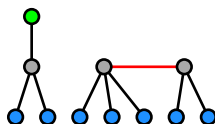
ID: 86  $V_1^n$   
n: 5 2



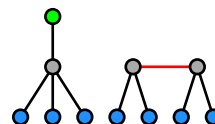
ID: 87  $V_1^{n-1} \boxtimes V_1$   
n: 5 2



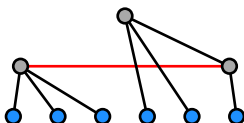
ID: 85  $V_1^{n-1} \boxtimes V_1$   
n: 5 2



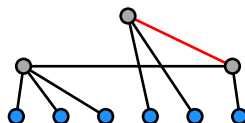
ID: 83  $V_1^{n-1} \boxtimes V_1$   
n: 5 2



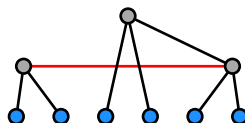
ID: 88  $V_1^n$   
n: 5 2



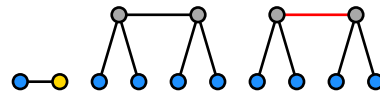
ID: 90  $V_1^n$   
n: 5 2



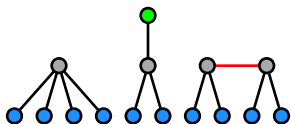
ID: 89  $V_1^n$   
n: 5 2



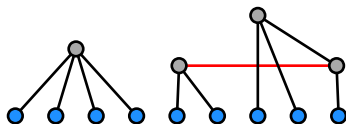
ID: 91  $V_1^n$   
n: 2



ID: 92  $V_1^{n-1} \boxtimes V_1$   
n: 2



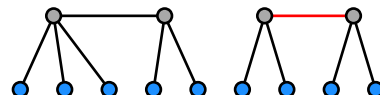
ID: 95  $V_1^n$   
n: 2



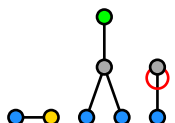
ID: 94  $V_1^n$   
n: 2



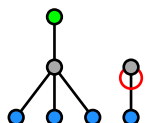
ID: 93  $V_1^n$   
n: 2



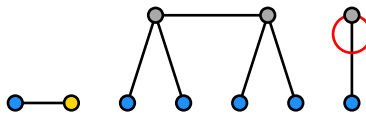
ID: 98  $V_1^{n-1} \boxtimes V_1$   
n: 8 5 2



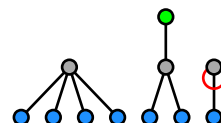
ID: 99  $V_1^{n-1} \boxtimes V_1$   
n: 8 5 2



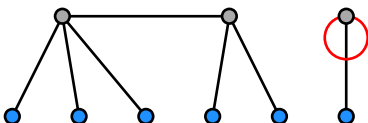
ID: 101  $V_1^n$   
n: 5 2



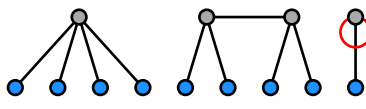
ID: 102  $V_1^{n-1} \boxtimes V_1$   
n: 5 2



ID: 103  $V_1^n$   
n: 5 2

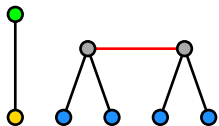


ID: 104  $V_1^n$   
n: 2

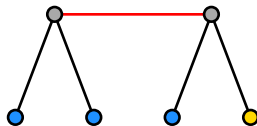


--- B,Birr cases with weight 11 relations      relation groups: 2 ---

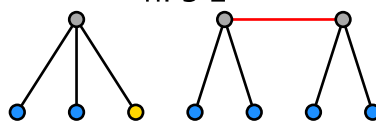
ID: 77     $V_{1^{n-1}} \boxtimes V_1$   
n: 8 5 2



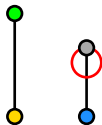
ID: 79     $V_{1^n}$   
n: 8 5 2    redundant



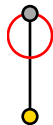
ID: 84     $V_{1^n}$   
n: 5 2



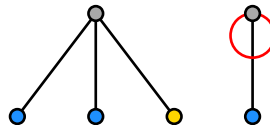
ID: 97     $V_{1^{n-1}} \boxtimes V_1$   
n: 11 8 5 2



ID: 96     $V_{1^n}$   
n: 11 8 5 2    redundant

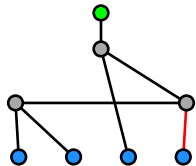


ID: 100     $V_{1^n}$   
n: 8 5 2

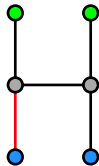


----- edges: 13-n      graphs: 24      -----  
 --- A2 case with weight 13 relations      relation groups: 2 ---

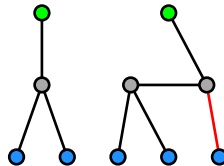
ID: 110  $V_{1^{n-1}} \boxtimes V_1$   
 n: 8 5 2



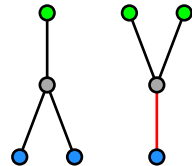
ID: 106  $V_{1^{n-2}} \boxtimes V_1 \boxtimes V_1$   
 n: 11 8 5 2



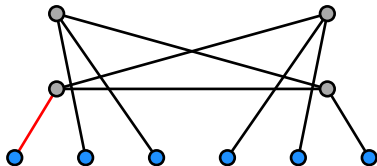
ID: 108  $V_{1^{n-2}} \boxtimes V_1 \boxtimes V_1$   
 n: 8 5 2      redundant



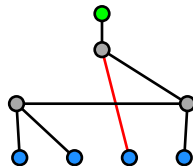
ID: 105  $V_{1^{n-3}} \boxtimes V_1 \boxtimes V_2$   
 n: 11 8 5      redundant



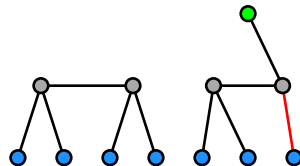
ID: 112  $V_1^n$   
 n: 5 2



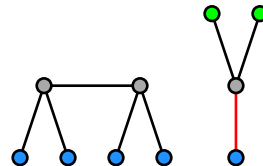
ID: 109  $V_{1^{n-1}} \boxtimes V_1$   
 n: 8 5 2



ID: 111  $V_{1^{n-1}} \boxtimes V_1$   
 n: 5 2      redundant



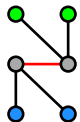
ID: 107  $V_{1^{n-2}} \boxtimes V_2$   
 n: 8 5 2      redundant



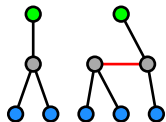


--- B,Birr cases without weight 11 relations      graphs: 16 ---

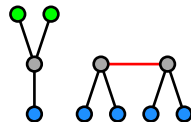
ID: 113    $V_{1^{n-2}} \boxtimes V_2$   
n: 11 8 5 2



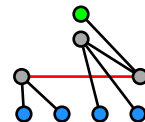
ID: 115    $V_{1^{n-2}} \boxtimes V_1 \boxtimes V_1$   
n: 8 5 2



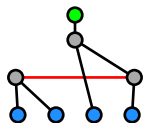
ID: 114    $V_{1^{n-2}} \boxtimes V_2$   
n: 8 5 2



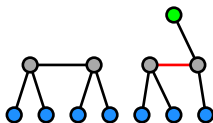
ID: 116    $V_{1^{n-1}} \boxtimes V_1$   
n: 8 5 2



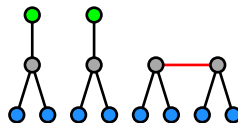
ID: 117    $V_{1^{n-1}} \boxtimes V_1$   
n: 8 5 2



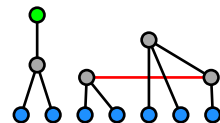
ID: 121    $V_{1^{n-1}} \boxtimes V_1$   
n: 5 2



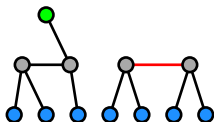
ID: 118    $V_{1^{n-2}} \boxtimes V_2$   
n: 5 2



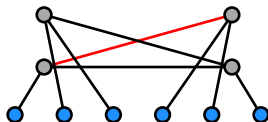
ID: 120    $V_{1^{n-1}} \boxtimes V_1$   
n: 5 2



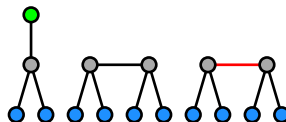
ID: 119    $V_{1^{n-1}} \boxtimes V_1$   
n: 5 2



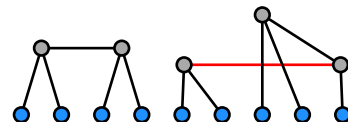
ID: 122    $V_{1^n}$   
n: 5 2



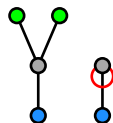
ID: 123    $V_{1^{n-1}} \boxtimes V_1$   
n: 2



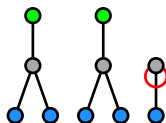
ID: 124    $V_{1^n}$   
n: 2



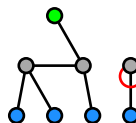
ID: 125    $V_{1^{n-2}} \boxtimes V_2$   
n: 11 8 5 2



ID: 126    $V_{1^{n-2}} \boxtimes V_2$   
n: 8 5 2



ID: 127    $V_{1^{n-1}} \boxtimes V_1$   
n: 8 5 2



ID: 128    $V_{1^{n-1}} \boxtimes V_1$   
n: 5 2

