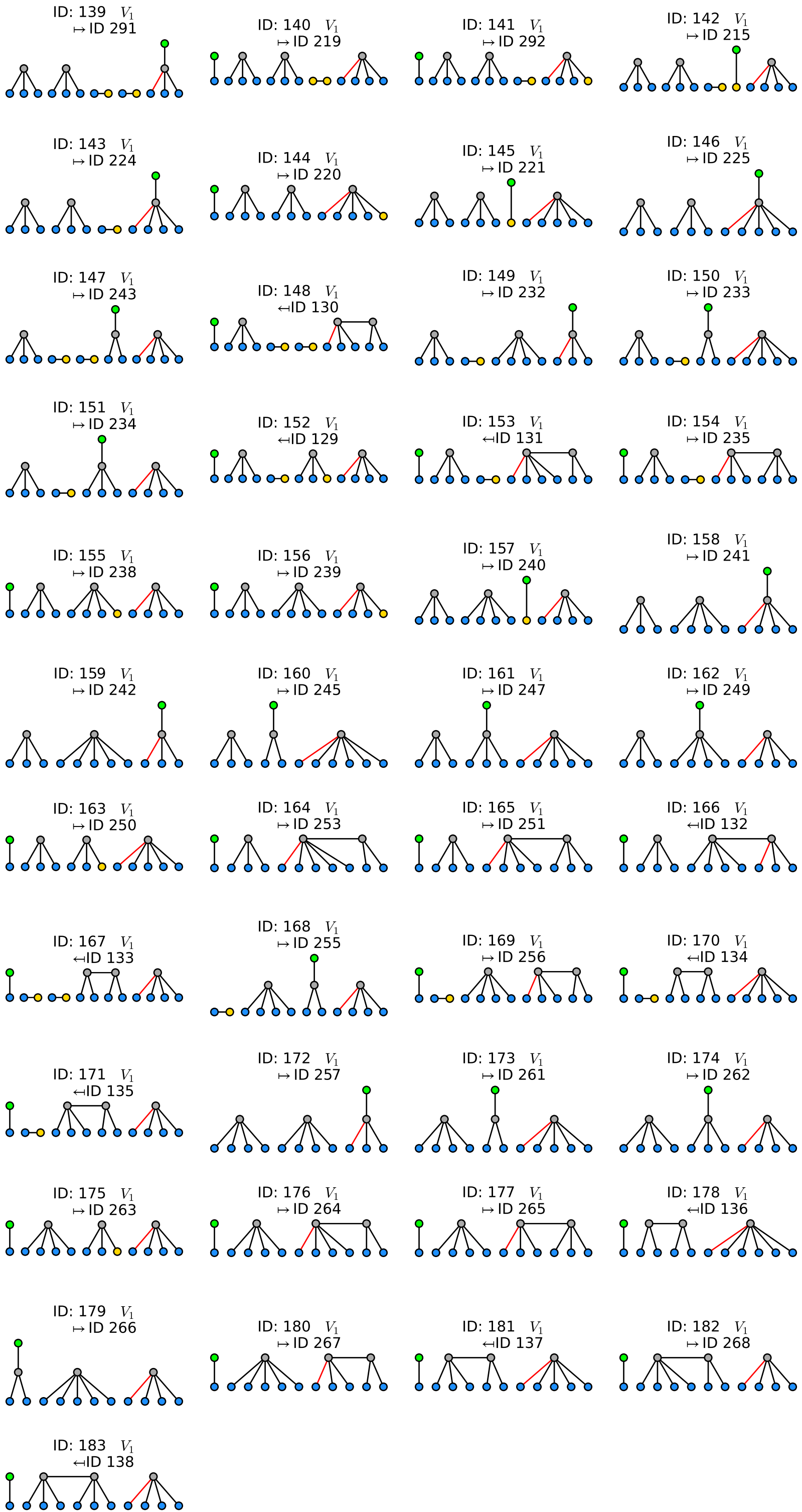
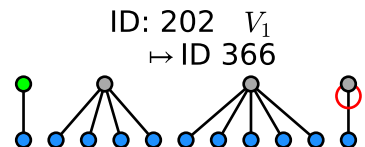
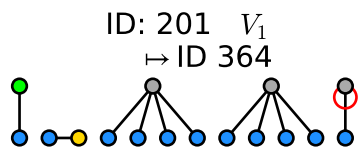
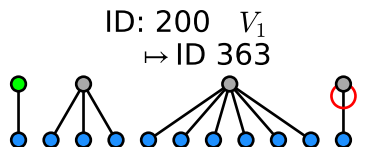
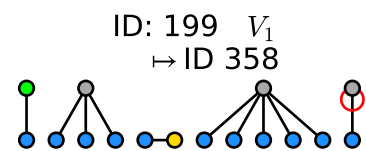
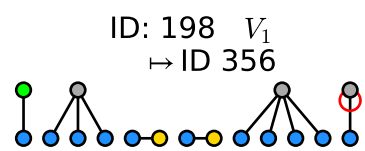
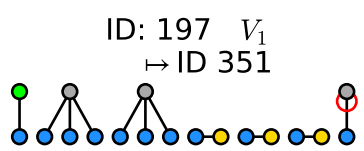
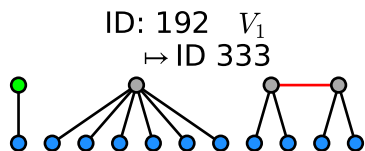
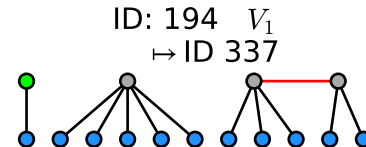
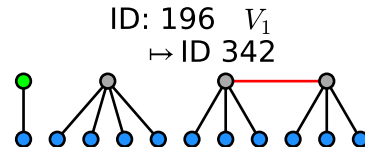
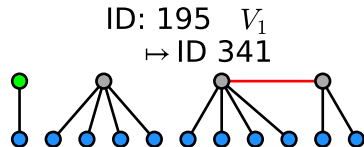
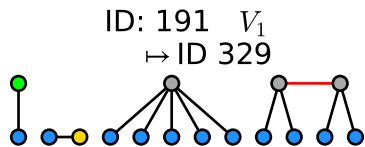
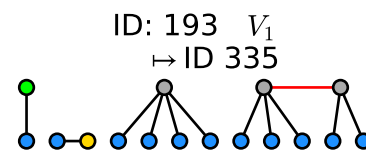
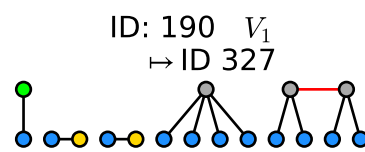
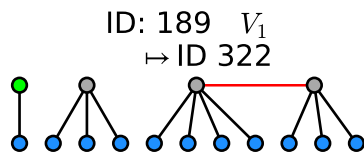
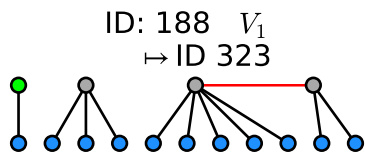
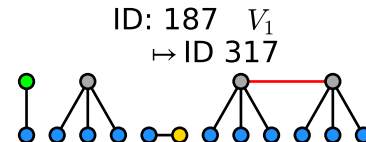
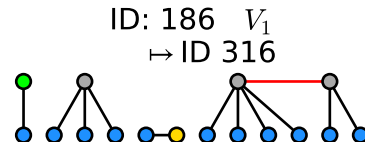
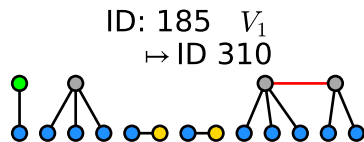
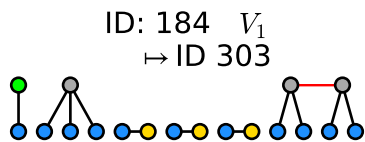


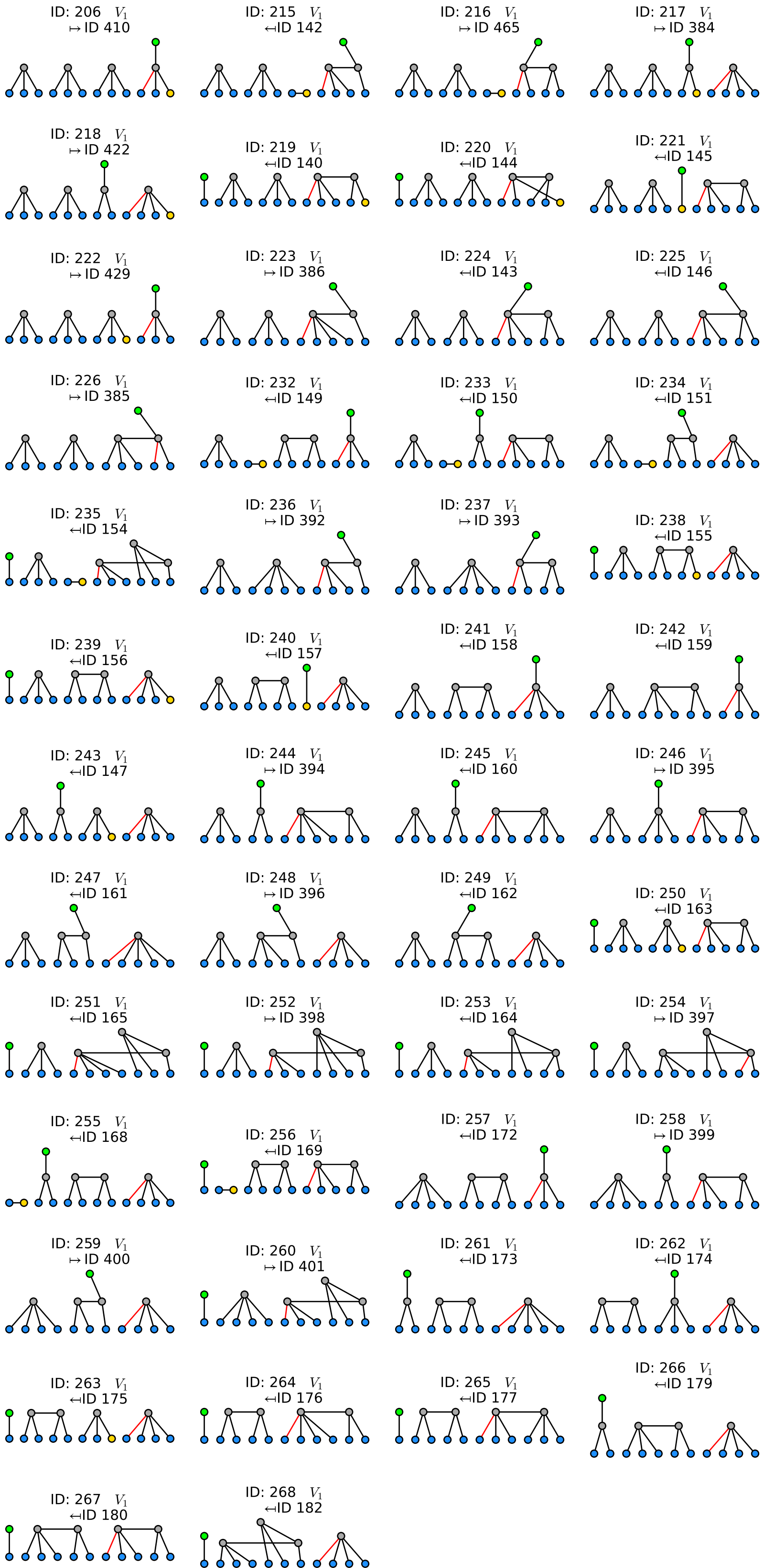


----- edges: 10      graphs: 64      -----  
 ----- A3 case      graphs: 45      -----





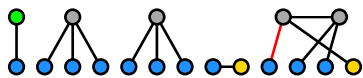
----- edges: 11      graphs: 145      -----  
 ----- A3 case      graphs: 50      -----



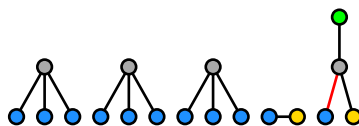
----- A2 case with weight 13 relations

relation groups: 4 -----

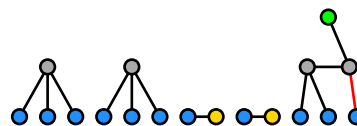
ID: 274  $V_1$   
 $\mapsto$  ID 425



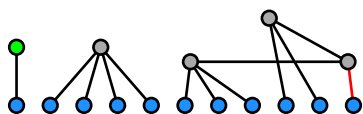
ID: 270  $V_1$   
 $\mapsto$  ID 525



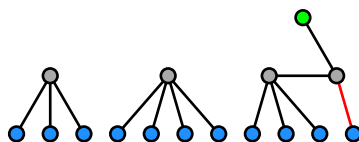
ID: 273  $V_1$   
Redundant



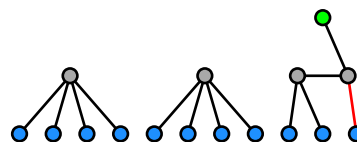
ID: 287  $V_1$   
 $\mapsto$  ID 446



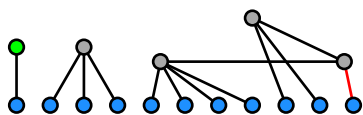
ID: 283  $V_1$   
 $\mapsto$  ID 438



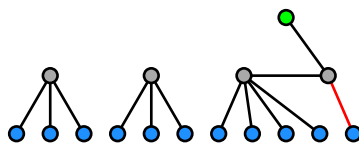
ID: 286  $V_1$   
Redundant



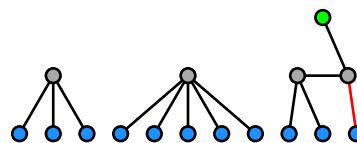
ID: 285  $V_1$   
 $\mapsto$  ID 441



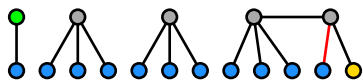
ID: 278  $V_1$   
 $\mapsto$  ID 430



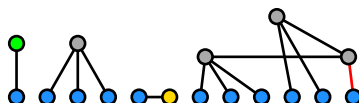
ID: 284  $V_1$   
Redundant



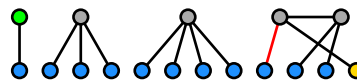
ID: 277  $V_1$   
 $\mapsto$  ID 424



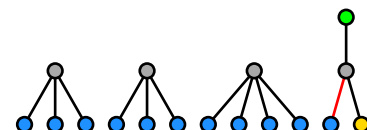
ID: 281  $V_1$   
Redundant



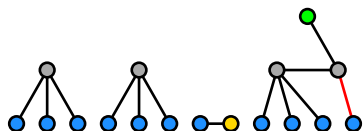
ID: 282  $V_1$   
 $\mapsto$  ID 437



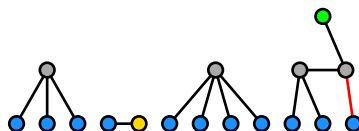
ID: 276  $V_1$   
 $\mapsto$  ID 421

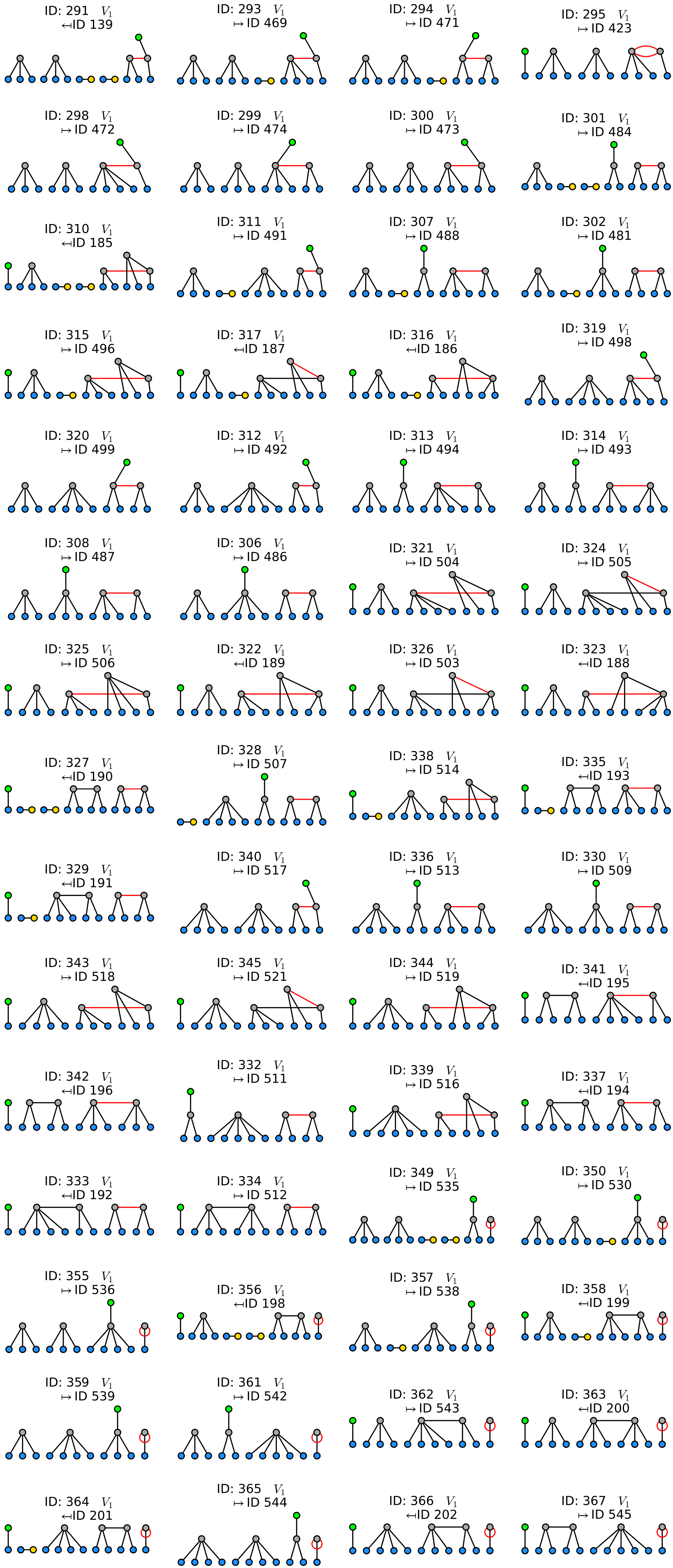


ID: 275  $V_1$   
Redundant



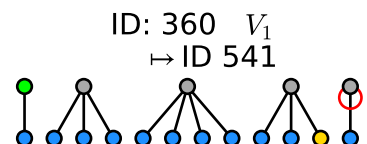
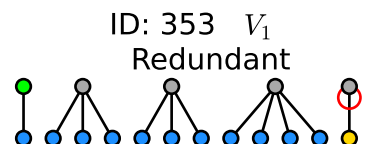
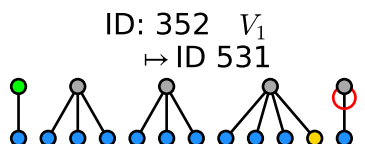
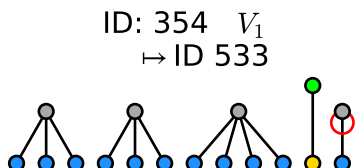
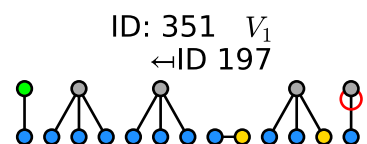
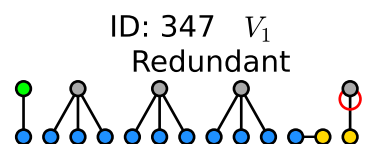
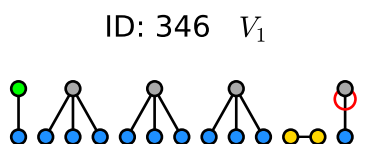
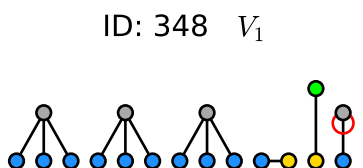
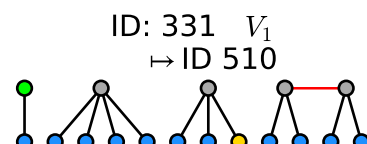
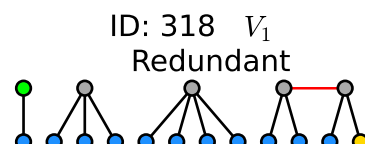
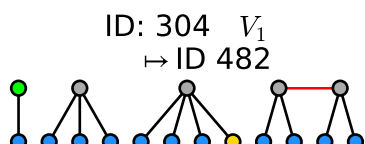
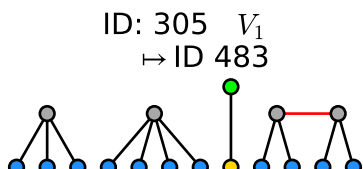
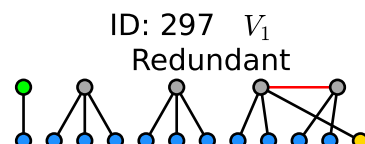
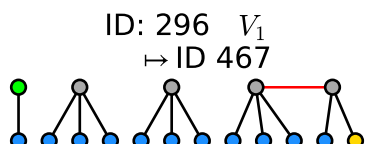
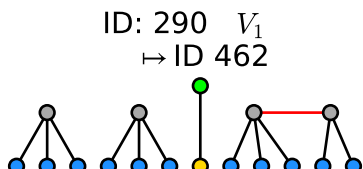
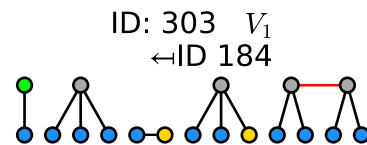
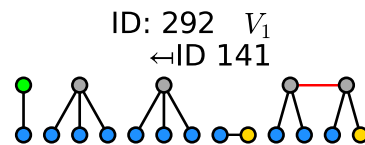
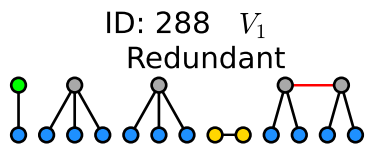
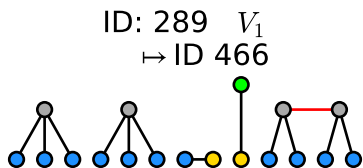
ID: 280  $V_1$   
Redundant





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

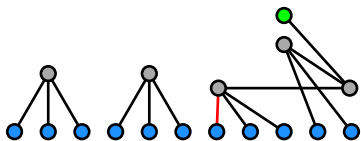
relation groups: 5 -----



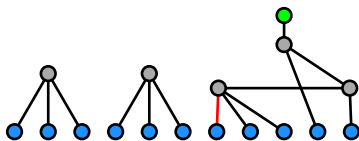
----- edges: 12  
 ----- A3 case

graphs: 116  
 graphs: 14 -----

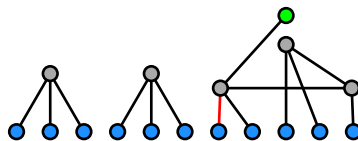
ID: 383  $V_1$   
 $\mapsto$  ID 565



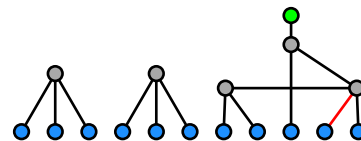
ID: 384  $V_1$   
 $\leftarrow$  ID 217



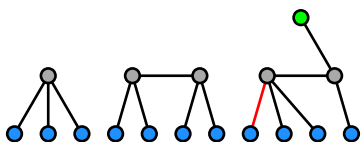
ID: 385  $V_1$   
 $\leftarrow$  ID 226



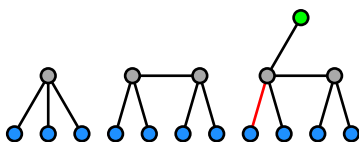
ID: 386  $V_1$   
 $\leftarrow$  ID 223



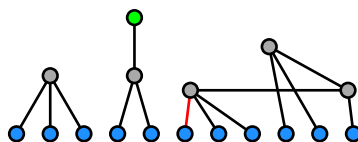
ID: 392  $V_1$   
 $\leftarrow$  ID 236



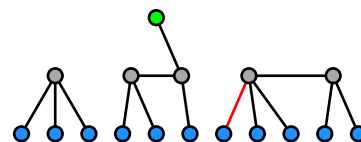
ID: 393  $V_1$   
 $\leftarrow$  ID 237



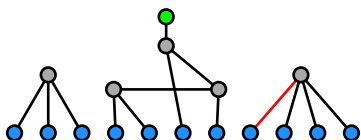
ID: 394  $V_1$   
 $\leftarrow$  ID 244



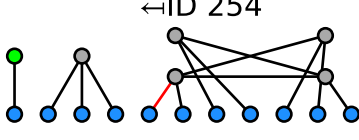
ID: 395  $V_1$   
 $\leftarrow$  ID 246



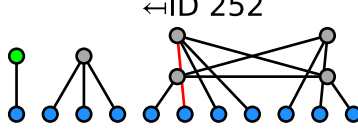
ID: 396  $V_1$   
 $\leftarrow$  ID 248



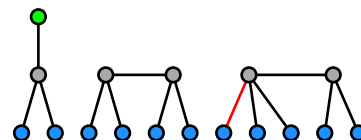
ID: 397  $V_1$   
 $\leftarrow$  ID 254



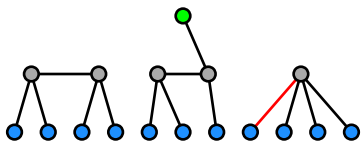
ID: 398  $V_1$   
 $\leftarrow$  ID 252



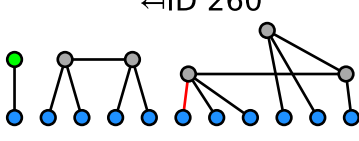
ID: 399  $V_1$   
 $\leftarrow$  ID 258



ID: 400  $V_1$   
 $\leftarrow$  ID 259



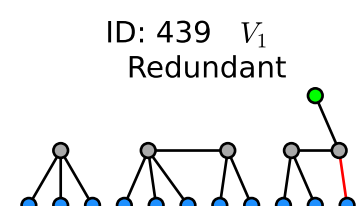
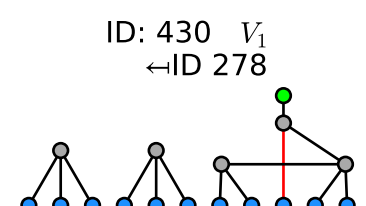
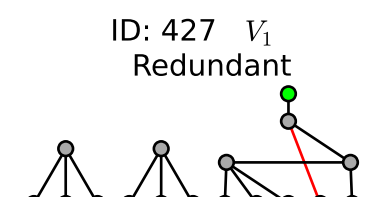
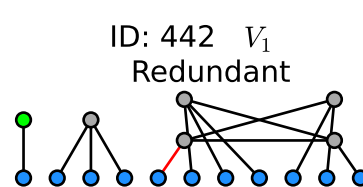
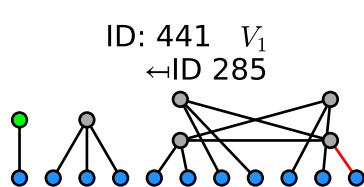
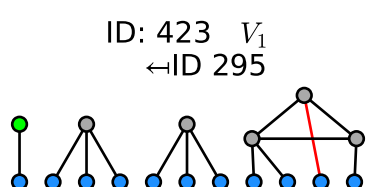
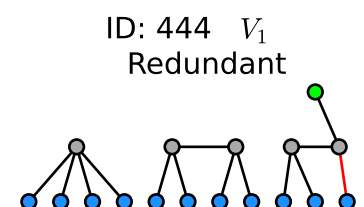
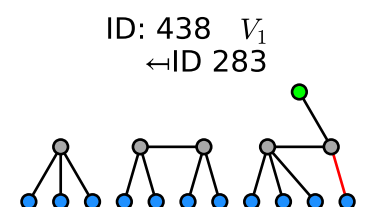
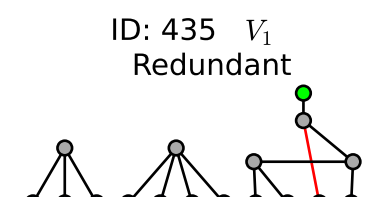
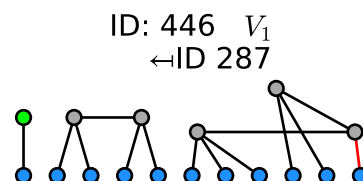
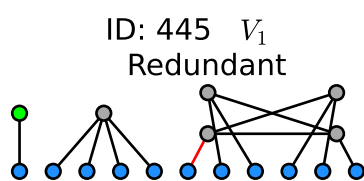
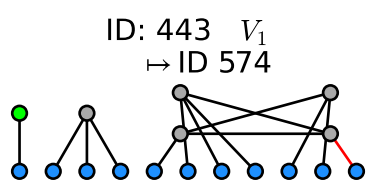
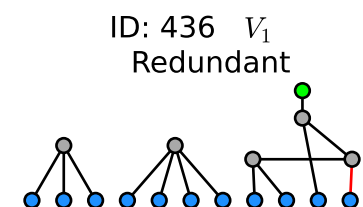
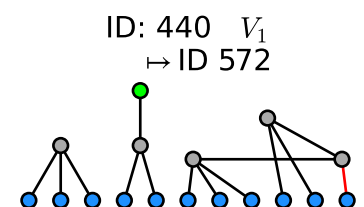
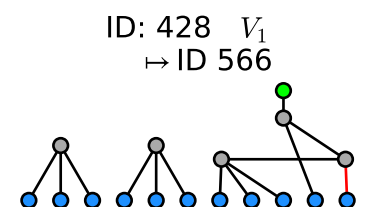
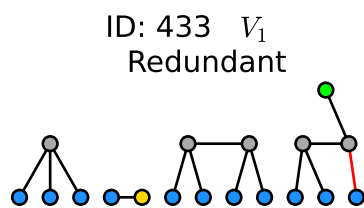
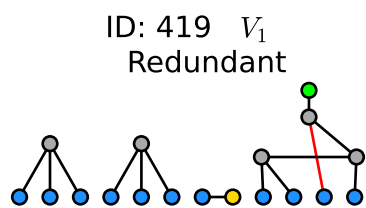
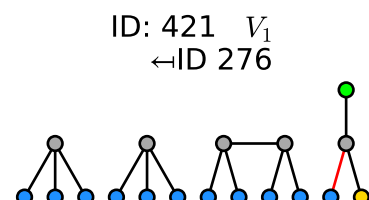
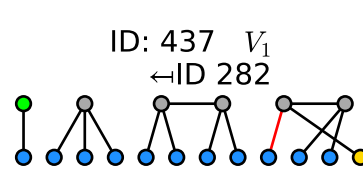
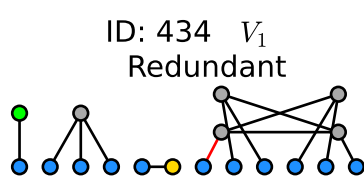
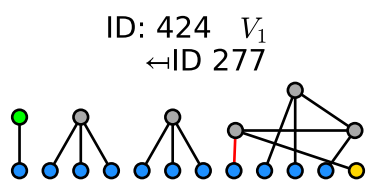
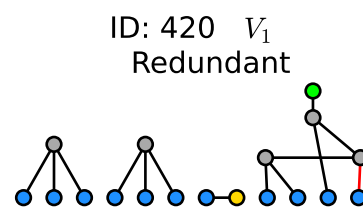
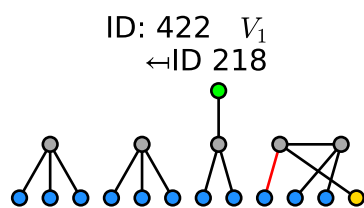
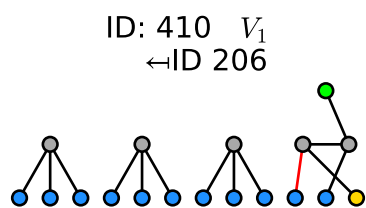
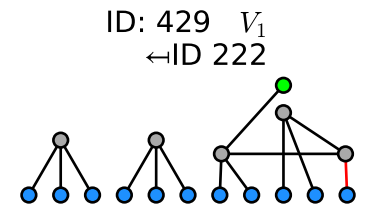
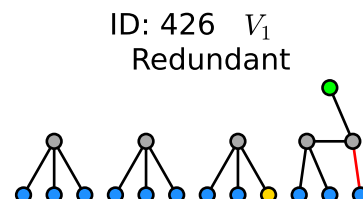
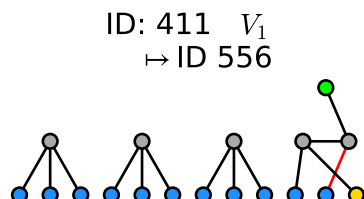
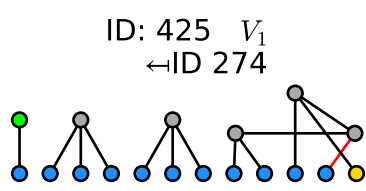
ID: 401  $V_1$   
 $\leftarrow$  ID 260

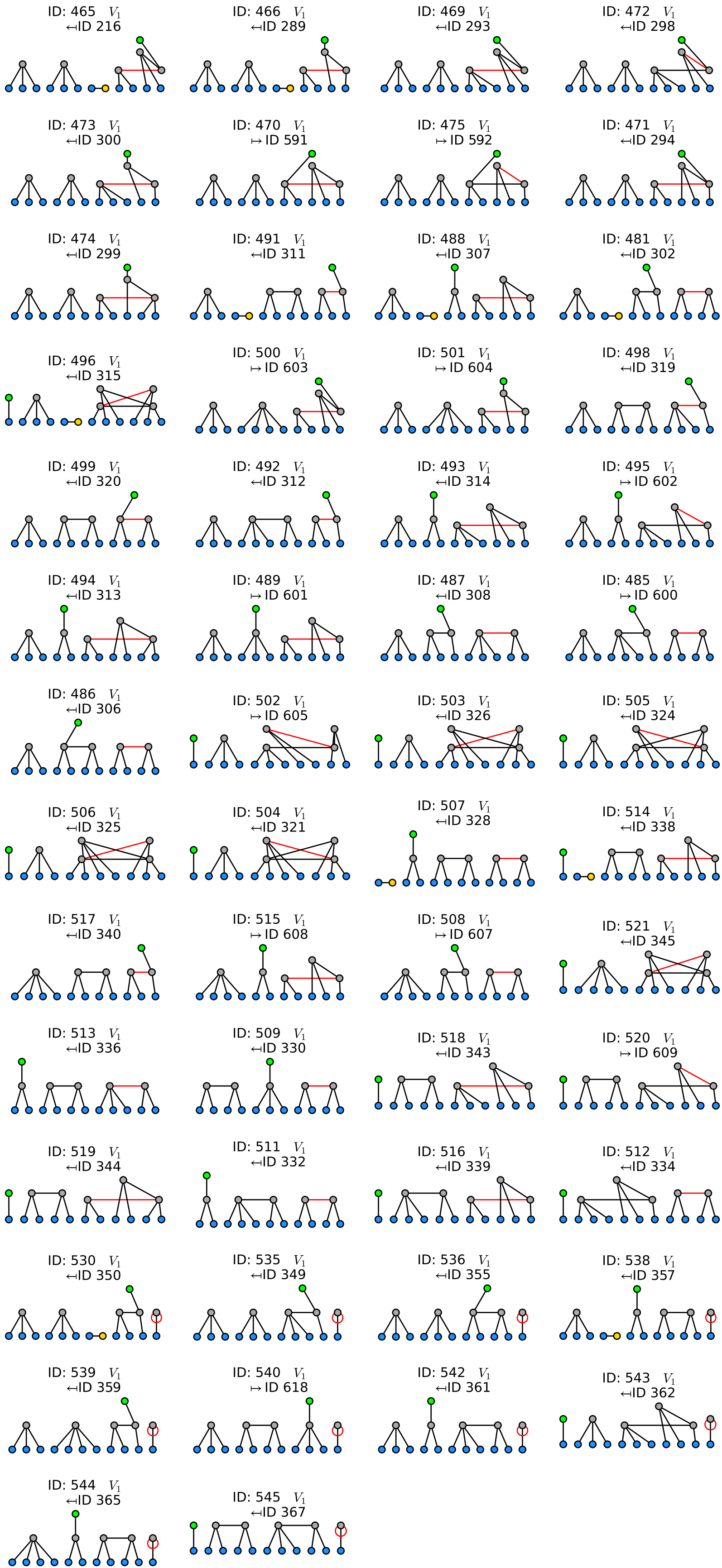




----- A2 case with weight 13 relations

relation groups: 7 -----

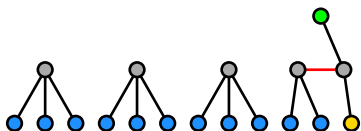




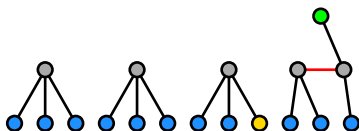
----- B,Birr cases with weight 11 relations

relation groups: 6 -----

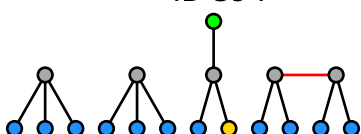
ID: 451  $V_1$   
Redundant



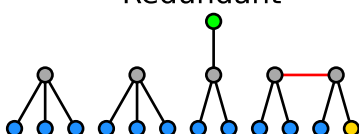
ID: 463  $V_1$   
 $\mapsto$  ID 593



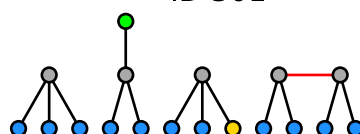
ID: 461  $V_1$   
 $\mapsto$  ID 594



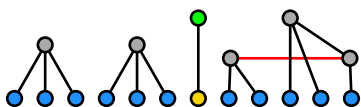
ID: 464  $V_1$   
Redundant



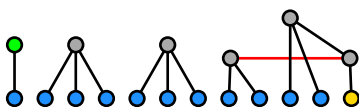
ID: 484  $V_1$   
 $\leftarrow$  ID 301



ID: 462  $V_1$   
 $\leftarrow$  ID 290



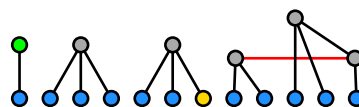
ID: 467  $V_1$   
 $\leftarrow$  ID 296



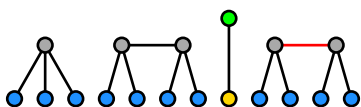
ID: 468  $V_1$   
Redundant



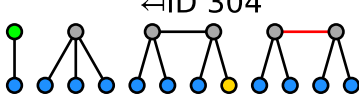
ID: 490  $V_1$   
 $\leftarrow$  ID 309



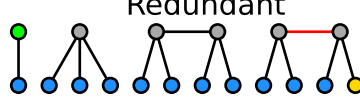
ID: 483  $V_1$   
 $\leftarrow$  ID 305



ID: 482  $V_1$   
 $\leftarrow$  ID 304



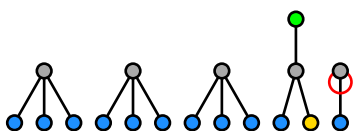
ID: 497  $V_1$   
Redundant



ID: 510  $V_1$   
 $\leftarrow$  ID 331



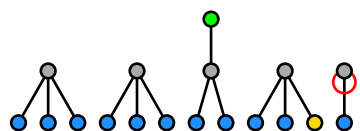
ID: 525  $V_1$   
 $\leftarrow$  ID 270



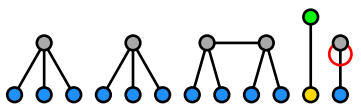
ID: 526  $V_1$   
Redundant



ID: 534  $V_1$   
 $\mapsto$  ID 616



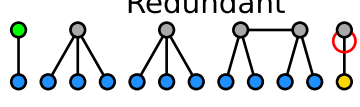
ID: 533  $V_1$   
 $\leftarrow$  ID 354



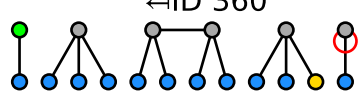
ID: 531  $V_1$   
 $\leftarrow$  ID 352



ID: 532  $V_1$   
Redundant

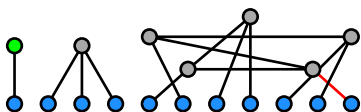


ID: 541  $V_1$   
 $\leftarrow$  ID 360

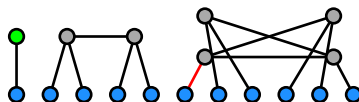


----- edges: 13    graphs: 29    -----  
 ----- A2 case with weight 13 relations    relation groups: 4 -----

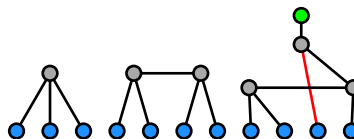
ID: 574  $V_1$   
 $\leftrightarrow$ ID 443



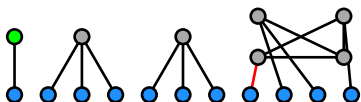
ID: 575  $V_1$   
 Redundant



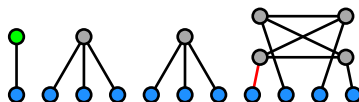
ID: 570  $V_1$   
 Redundant



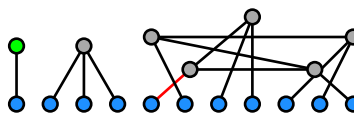
ID: 563  $V_1$



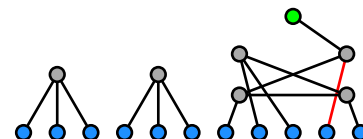
ID: 564  $V_1$   
 Redundant



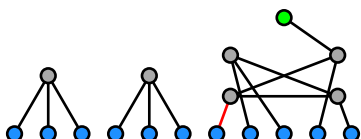
ID: 573  $V_1$   
 Redundant



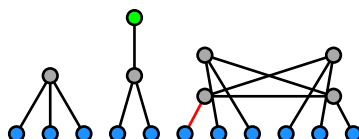
ID: 567  $V_1$   
 Redundant



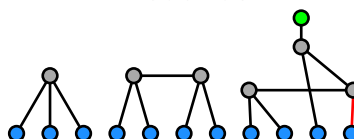
ID: 566  $V_1$   
 $\leftrightarrow$ ID 428



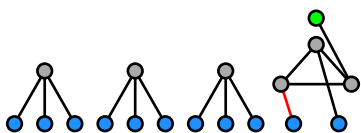
ID: 572  $V_1$   
 $\leftrightarrow$ ID 440



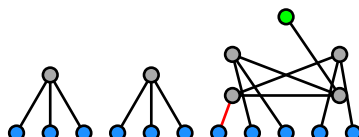
ID: 571  $V_1$   
 Redundant



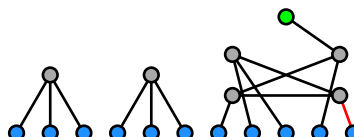
ID: 556  $V_1$   
 $\leftrightarrow$ ID 411



ID: 565  $V_1$   
 $\leftrightarrow$ ID 383

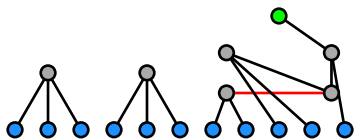


ID: 568  $V_1$   
 Redundant

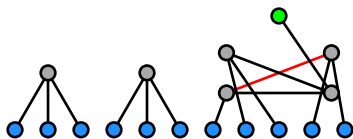


----- B,Birr cases without weight 11 relations      graphs: 16 -----

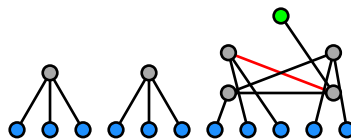
ID: 591  $V_1$   
 $\leftrightarrow$ ID 470



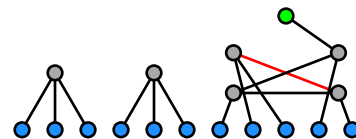
ID: 592  $V_1$   
 $\leftrightarrow$ ID 475



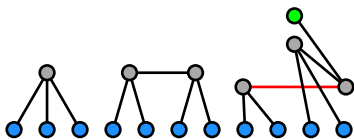
ID: 593  $V_1$   
 $\leftrightarrow$ ID 463



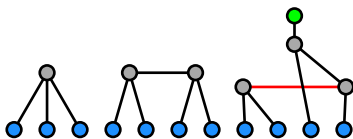
ID: 594  $V_1$   
 $\leftrightarrow$ ID 461



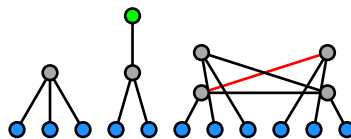
ID: 603  $V_1$   
 $\leftrightarrow$ ID 500



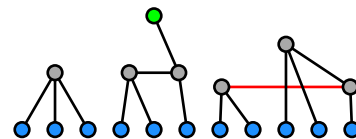
ID: 604  $V_1$   
 $\leftrightarrow$ ID 501



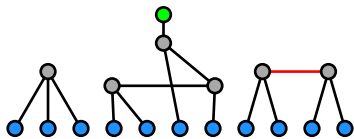
ID: 602  $V_1$   
 $\leftrightarrow$ ID 495



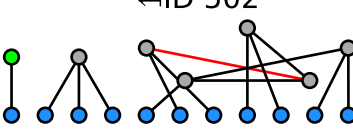
ID: 601  $V_1$   
 $\leftrightarrow$ ID 489



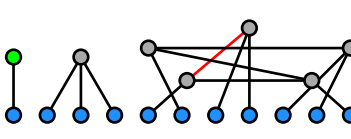
ID: 600  $V_1$   
 $\leftrightarrow$ ID 485



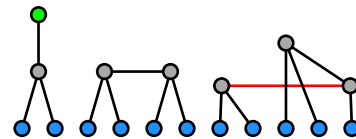
ID: 605  $V_1$   
 $\leftrightarrow$ ID 502



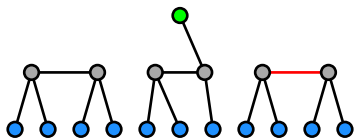
ID: 606  $V_1$



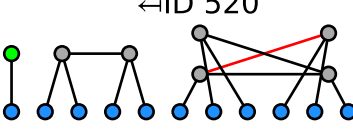
ID: 608  $V_1$   
 $\leftrightarrow$ ID 515



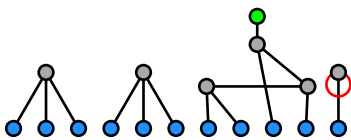
ID: 607  $V_1$   
 $\leftrightarrow$ ID 508



ID: 609  $V_1$   
 $\leftrightarrow$ ID 520



ID: 616  $V_1$   
 $\leftrightarrow$ ID 534



ID: 618  $V_1$   
 $\leftrightarrow$ ID 540

