

----- g,n: 7,4 graphs: 392 eliminated+redundant: 378 -----

Euler Characteristic (without relations): $-6V_1^4 + 2V_1^3 \boxtimes V_1 + 1V_1^2 \boxtimes V_2 - 1V_1^2 \boxtimes V_1^2 + 4V_1^2 \boxtimes V_1 \boxtimes V_1 - 3V_1 \boxtimes V_1 \boxtimes V_2 - 1V_1 \boxtimes V_1 \boxtimes V_1 \boxtimes V_1$

----- edges: 6 graphs: 4 -----

----- A3 case graphs: 4 -----

ID: 129 V_1^4
 \mapsto ID 152



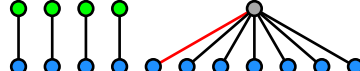
ID: 130 V_1^4
 \mapsto ID 148



ID: 131 V_1^4
 \mapsto ID 153

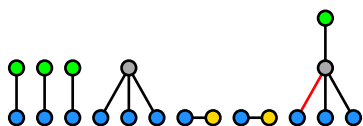


ID: 132 V_1^4
 \mapsto ID 166



----- edges: 7 graphs: 38 -----
 ----- A3 case graphs: 28 -----

ID: 139 $V_1^3 \boxtimes V_1$
 \mapsto ID 291



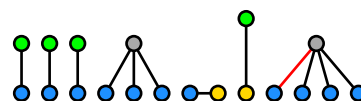
ID: 140 V_1^4
 \mapsto ID 219



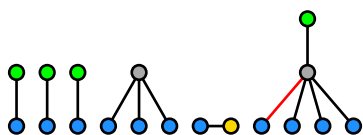
ID: 141 V_1^4
 \mapsto ID 292



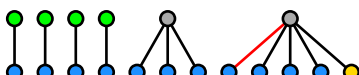
ID: 142 $V_1^3 \boxtimes V_1$
 \mapsto ID 215



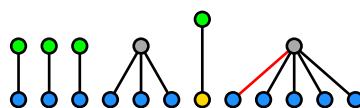
ID: 143 $V_1^3 \boxtimes V_1$
 \mapsto ID 224



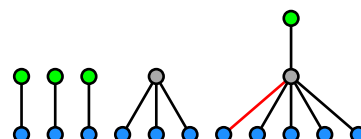
ID: 144 V_1^4
 \mapsto ID 220



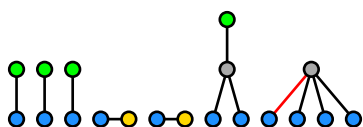
ID: 145 $V_1^3 \boxtimes V_1$
 \mapsto ID 221



ID: 146 $V_1^3 \boxtimes V_1$
 \mapsto ID 225



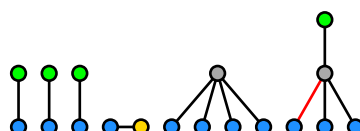
ID: 147 $V_1^3 \boxtimes V_1$
 \mapsto ID 243



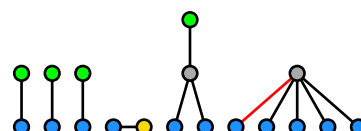
ID: 148 V_1^4
 \leftarrow ID 130



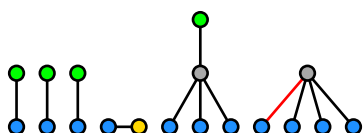
ID: 149 $V_1^3 \boxtimes V_1$
 \mapsto ID 232



ID: 150 $V_1^3 \boxtimes V_1$
 \mapsto ID 233



ID: 151 $V_1^3 \boxtimes V_1$
 \mapsto ID 234



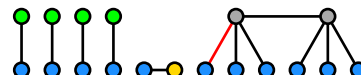
ID: 152 V_1^4
 \leftarrow ID 129



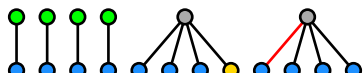
ID: 153 V_1^4
 \leftarrow ID 131



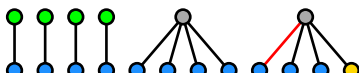
ID: 154 V_1^4
 \mapsto ID 235



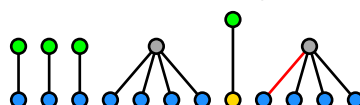
ID: 155 V_1^4
 \mapsto ID 238



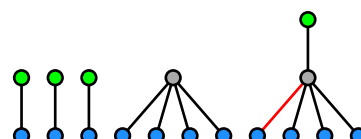
ID: 156 V_1^4
 \mapsto ID 239



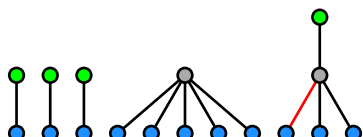
ID: 157 $V_1^3 \boxtimes V_1$
 \mapsto ID 240



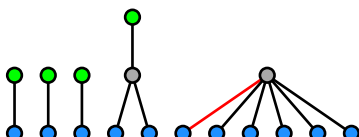
ID: 158 $V_1^3 \boxtimes V_1$
 \mapsto ID 241



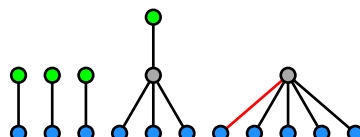
ID: 159 $V_1^3 \boxtimes V_1$
 \mapsto ID 242



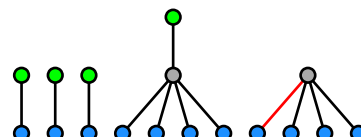
ID: 160 $V_1^3 \boxtimes V_1$
 \mapsto ID 245



ID: 161 $V_1^3 \boxtimes V_1$
 \mapsto ID 247



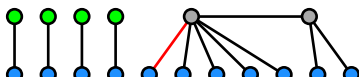
ID: 162 $V_1^3 \boxtimes V_1$
 \mapsto ID 249



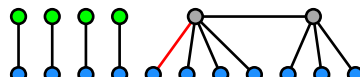
ID: 163 V_1^4
 \mapsto ID 250



ID: 164 V_1^4
 \mapsto ID 253



ID: 165 V_1^4
 \mapsto ID 251



ID: 166 V_1^4
 \leftarrow ID 132



----- B,Birr cases without weight 11 relations graphs: 10 -----

ID: 184 V_1^4
 \mapsto ID 303



ID: 185 V_1^4
 \mapsto ID 310



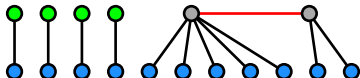
ID: 186 V_1^4
 \mapsto ID 316



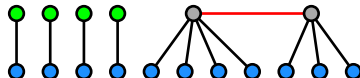
ID: 187 V_1^4
 \mapsto ID 317



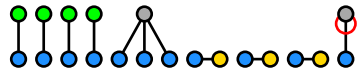
ID: 188 V_1^4
 \mapsto ID 323



ID: 189 V_1^4
 \mapsto ID 322



ID: 197 V_1^4
 \mapsto ID 351



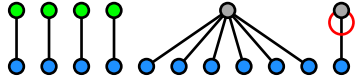
ID: 198 V_1^4
 \mapsto ID 356



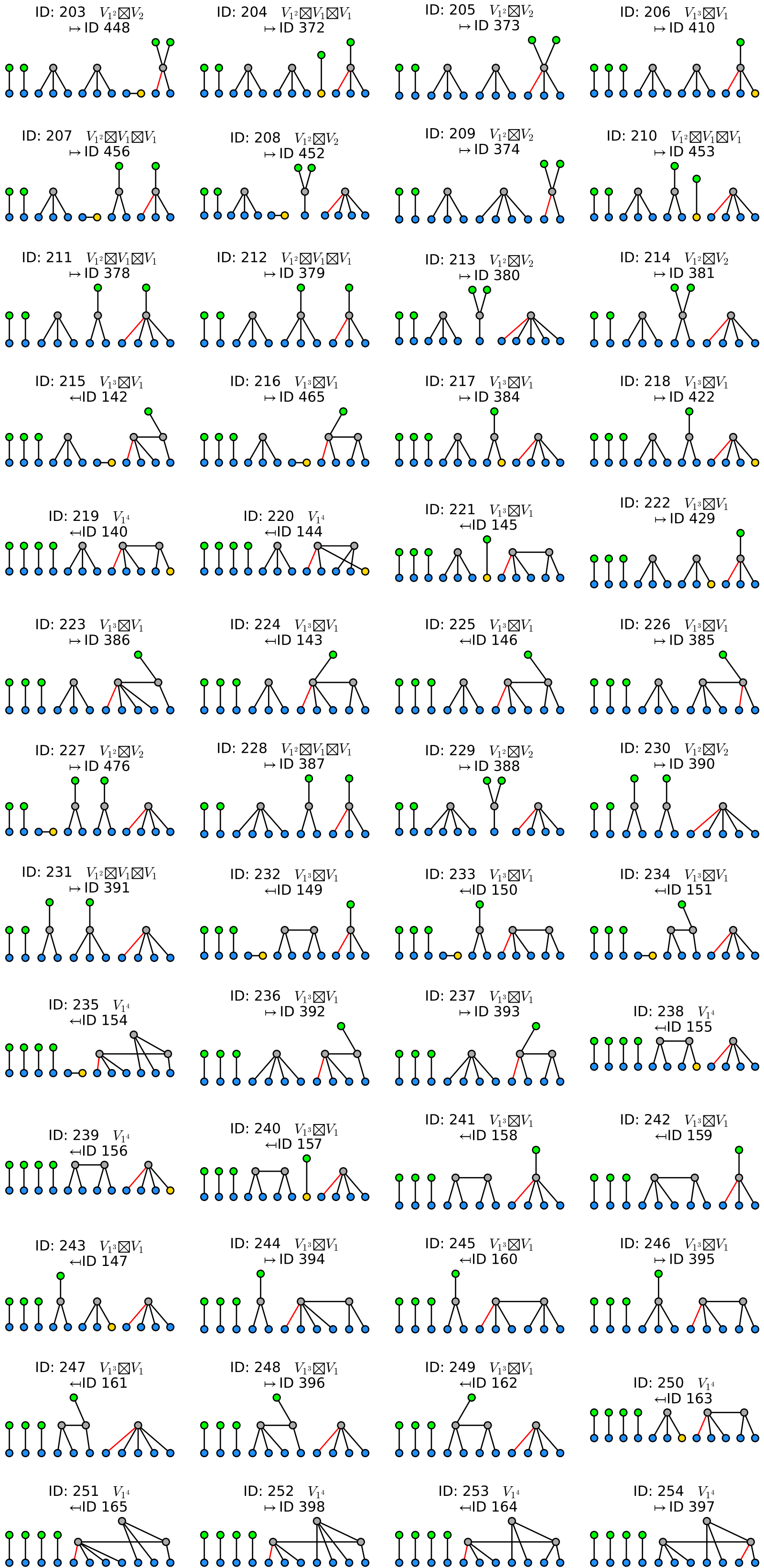
ID: 199 V_1^4
 \mapsto ID 358



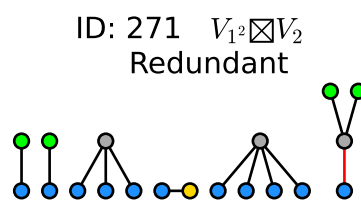
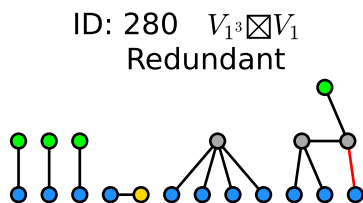
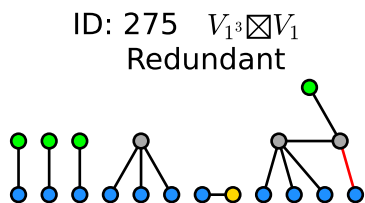
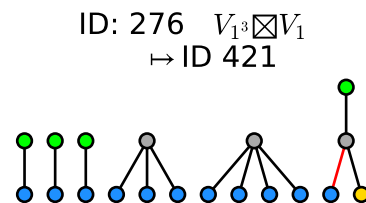
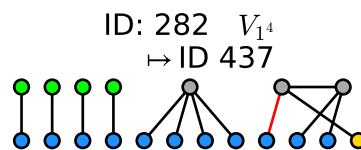
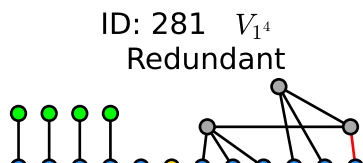
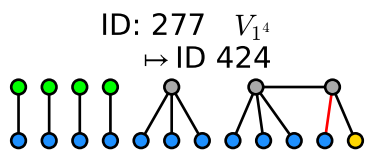
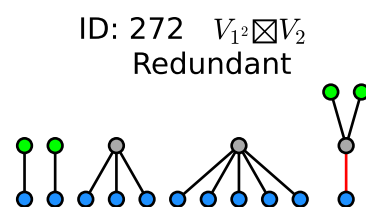
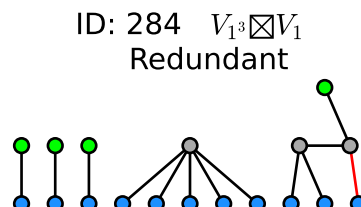
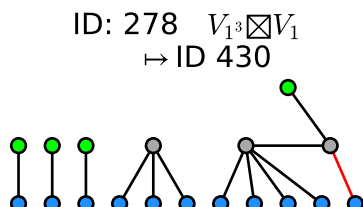
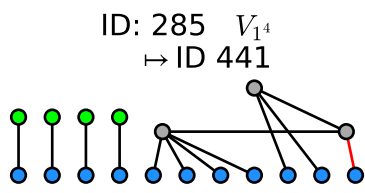
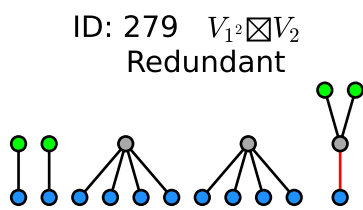
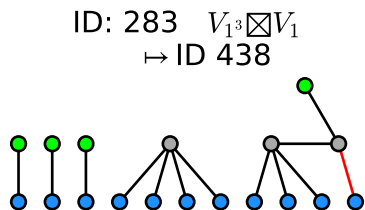
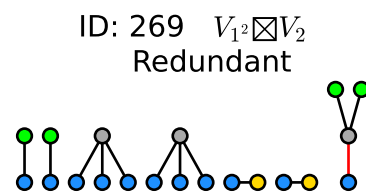
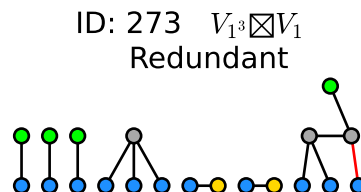
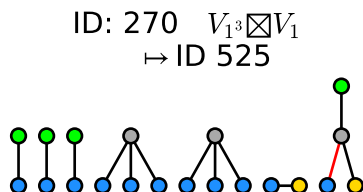
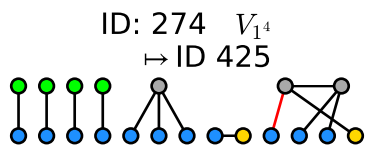
ID: 200 V_1^4
 \mapsto ID 363

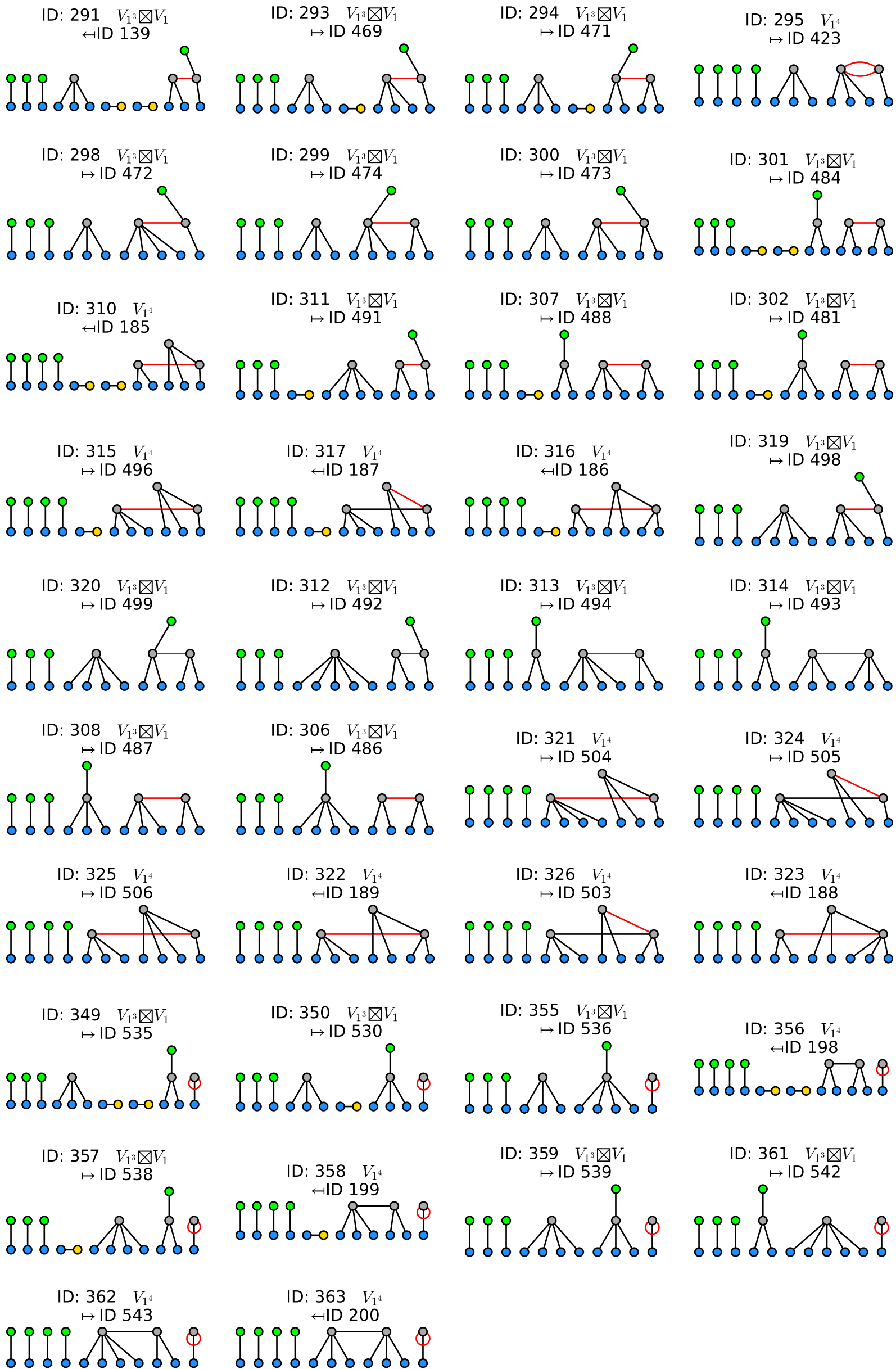


----- edges: 8 graphs: 126 -----
 ----- A3 case graphs: 52 -----



relation groups: 4 -----

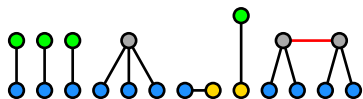




----- B,Birr cases with weight 11 relations

relation groups: 5 -----

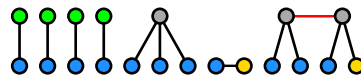
ID: 289 $V_1^3 \boxtimes V_1$
 \mapsto ID 466



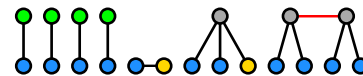
ID: 288 V_1^4
 Redundant



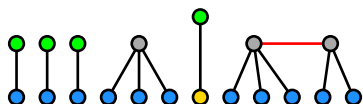
ID: 292 V_1^4
 \leftarrow ID 141



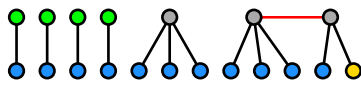
ID: 303 V_1^4
 \leftarrow ID 184



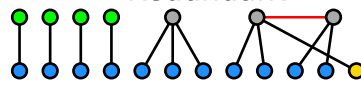
ID: 290 $V_1^3 \boxtimes V_1$
 \mapsto ID 462



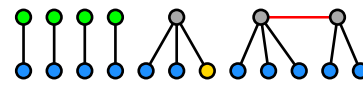
ID: 296 V_1^4
 \mapsto ID 467



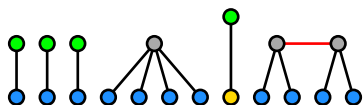
ID: 297 V_1^4
 Redundant



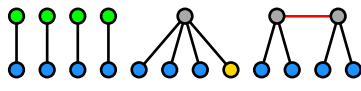
ID: 309 V_1^4
 \mapsto ID 490



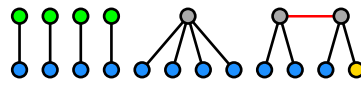
ID: 305 $V_1^3 \boxtimes V_1$
 \mapsto ID 483



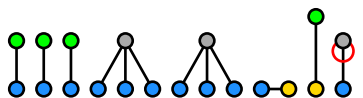
ID: 304 V_1^4
 \mapsto ID 482



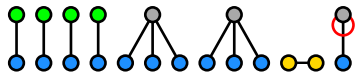
ID: 318 V_1^4
 Redundant



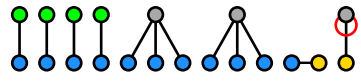
ID: 348 $V_1^3 \boxtimes V_1$



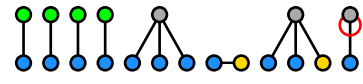
ID: 346 V_1^4



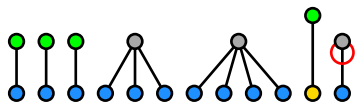
ID: 347 V_1^4
 Redundant



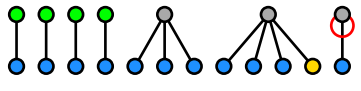
ID: 351 V_1^4
 \leftarrow ID 197



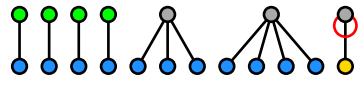
ID: 354 $V_1^3 \boxtimes V_1$
 \mapsto ID 533



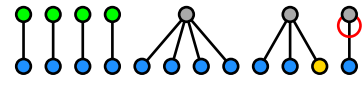
ID: 352 V_1^4
 \mapsto ID 531



ID: 353 V_1^4
 Redundant

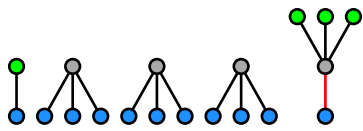


ID: 360 V_1^4
 \mapsto ID 541

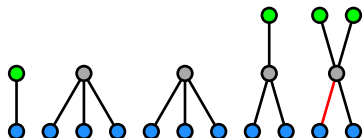


----- edges: 9 graphs: 155 -----
 ----- A3 case graphs: 31 -----

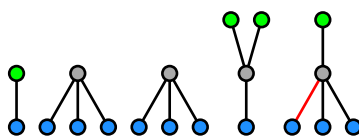
ID: 368 $V_1 \boxtimes V_3$
 \mapsto ID 576



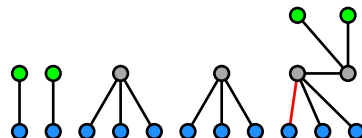
ID: 369 $V_1 \boxtimes V_1 \boxtimes V_2$
 \mapsto ID 578



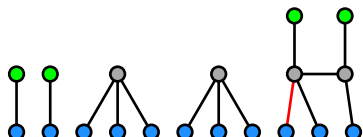
ID: 370 $V_1 \boxtimes V_2 \boxtimes V_1$
 \mapsto ID 577



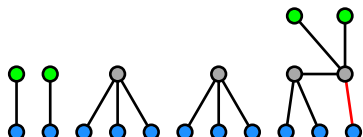
ID: 371 $V_1^2 \boxtimes V_2$
 \mapsto ID 553



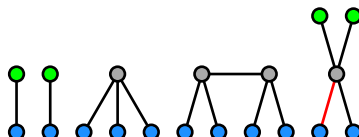
ID: 372 $V_1^2 \boxtimes V_1 \boxtimes V_1$
 \mapsto ID 204



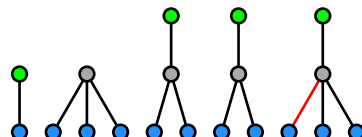
ID: 373 $V_1^2 \boxtimes V_2$
 \mapsto ID 205



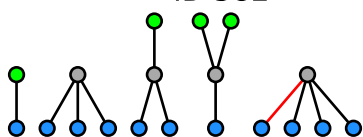
ID: 374 $V_1^2 \boxtimes V_2$
 \mapsto ID 209



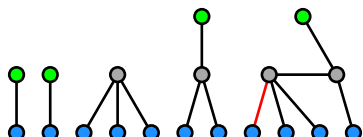
ID: 375 $V_1 \boxtimes V_2 \boxtimes V_1$
 \mapsto ID 586



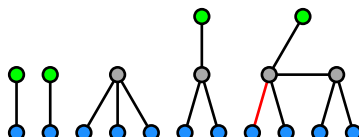
ID: 376 $V_1 \boxtimes V_1 \boxtimes V_2$
 \mapsto ID 582



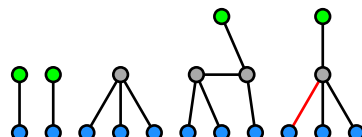
ID: 377 $V_1^2 \boxtimes V_1 \boxtimes V_1$
 \mapsto ID 561



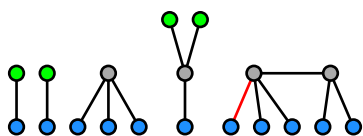
ID: 378 $V_1^2 \boxtimes V_1 \boxtimes V_1$
 \mapsto ID 211



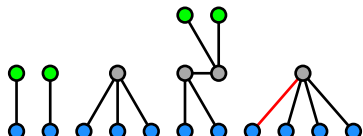
ID: 379 $V_1^2 \boxtimes V_1 \boxtimes V_1$
 \mapsto ID 212



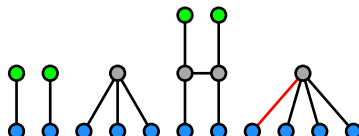
ID: 380 $V_1^2 \boxtimes V_2$
 \mapsto ID 213



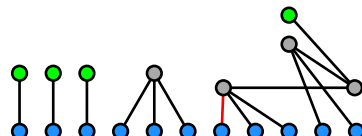
ID: 381 $V_1^2 \boxtimes V_2$
 \mapsto ID 214



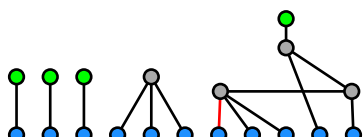
ID: 382 $V_1^2 \boxtimes V_2$
 \mapsto ID 584



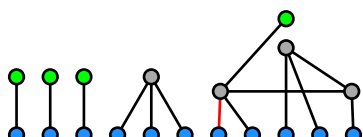
ID: 383 $V_1^3 \boxtimes V_1$
 \mapsto ID 565



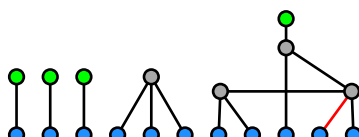
ID: 384 $V_1^3 \boxtimes V_1$
 \mapsto ID 217



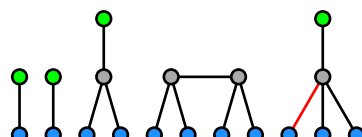
ID: 385 $V_1^3 \boxtimes V_1$
 \mapsto ID 226



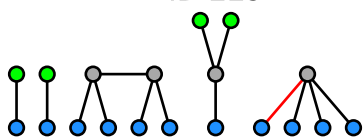
ID: 386 $V_1^3 \boxtimes V_1$
 \mapsto ID 223



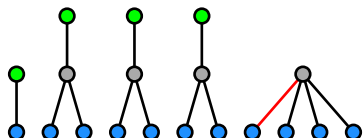
ID: 387 $V_1^2 \boxtimes V_1 \boxtimes V_1$
 \mapsto ID 228



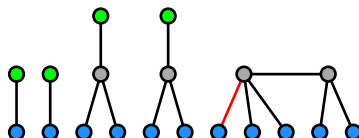
ID: 388 $V_1^2 \boxtimes V_2$
 \mapsto ID 229



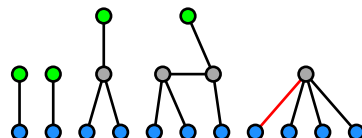
ID: 389 $V_1 \boxtimes V_3$
 \mapsto ID 596



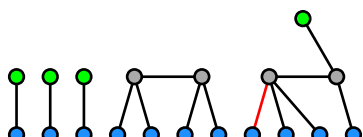
ID: 390 $V_1^2 \boxtimes V_2$
 \mapsto ID 230



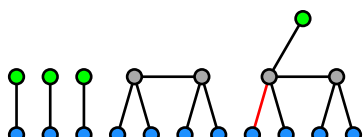
ID: 391 $V_1^2 \boxtimes V_1 \boxtimes V_1$
 \mapsto ID 231



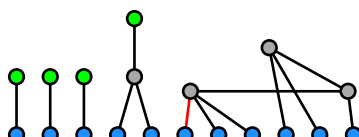
ID: 392 $V_1^3 \boxtimes V_1$
 \mapsto ID 236



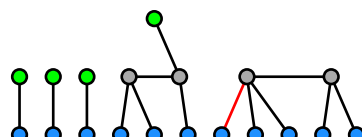
ID: 393 $V_1^3 \boxtimes V_1$
 \mapsto ID 237



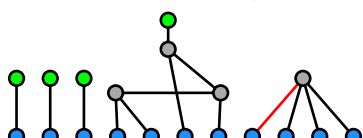
ID: 394 $V_1^3 \boxtimes V_1$
 \mapsto ID 244



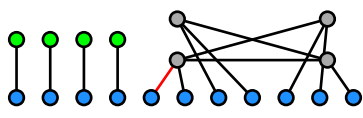
ID: 395 $V_1^3 \boxtimes V_1$
 \mapsto ID 246



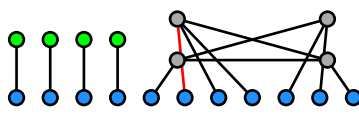
ID: 396 $V_1^3 \boxtimes V_1$
 \mapsto ID 248

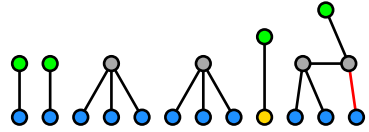
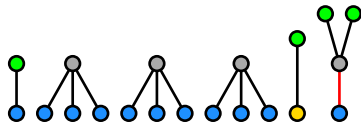
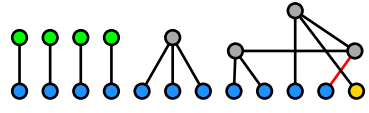
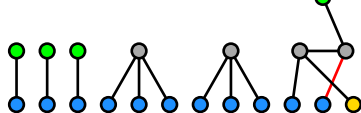
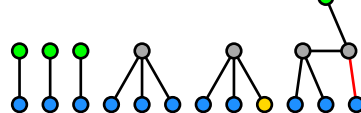
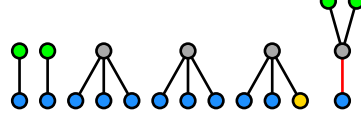
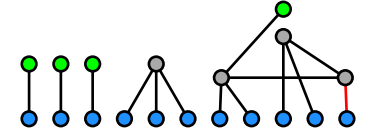
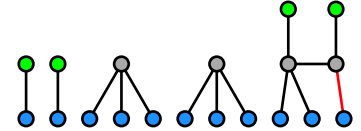
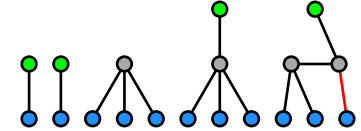
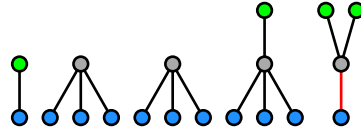
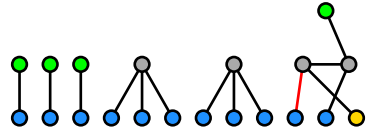
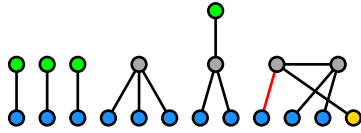
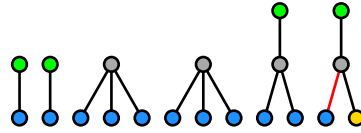
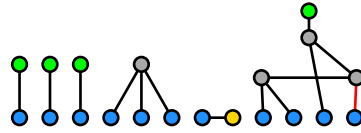
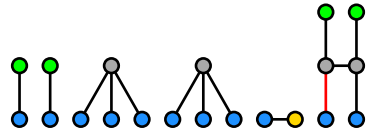
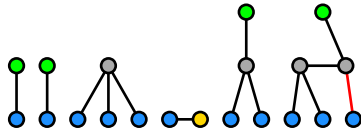
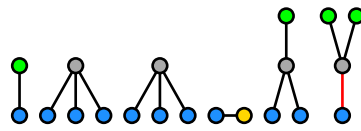
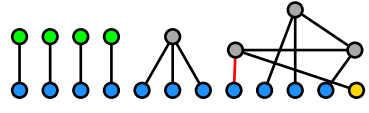
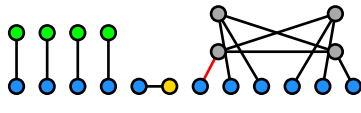
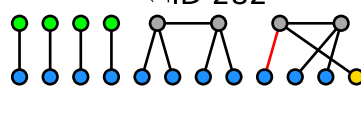
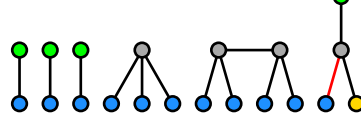
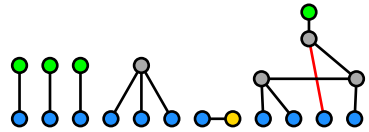
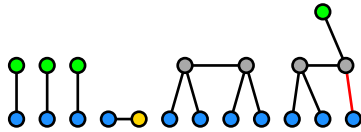
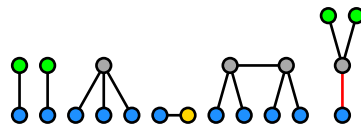
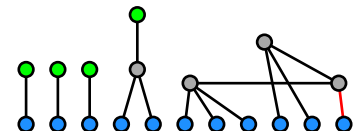
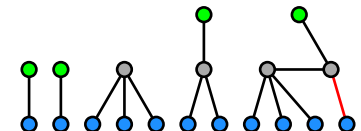
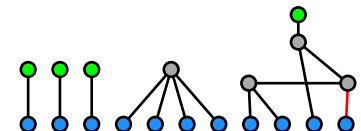
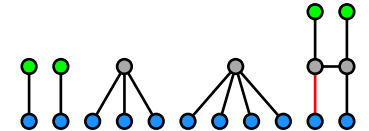
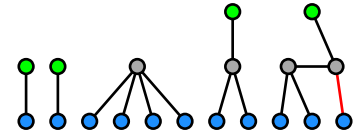
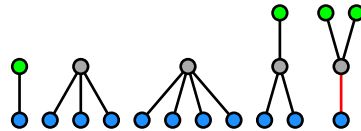
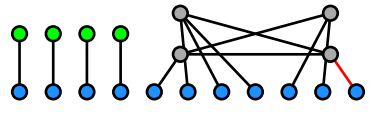
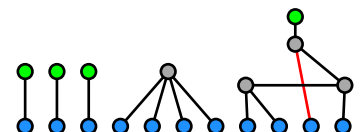
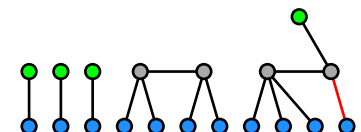
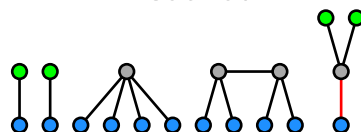
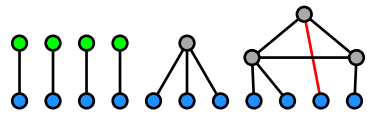
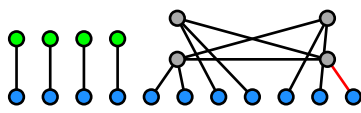
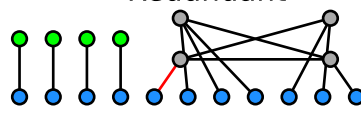
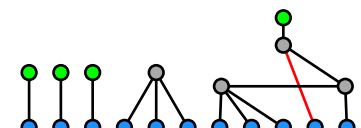
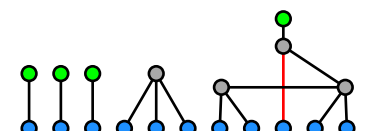
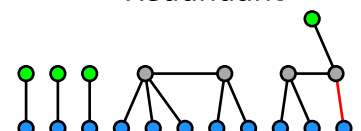
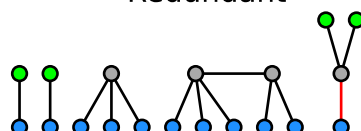


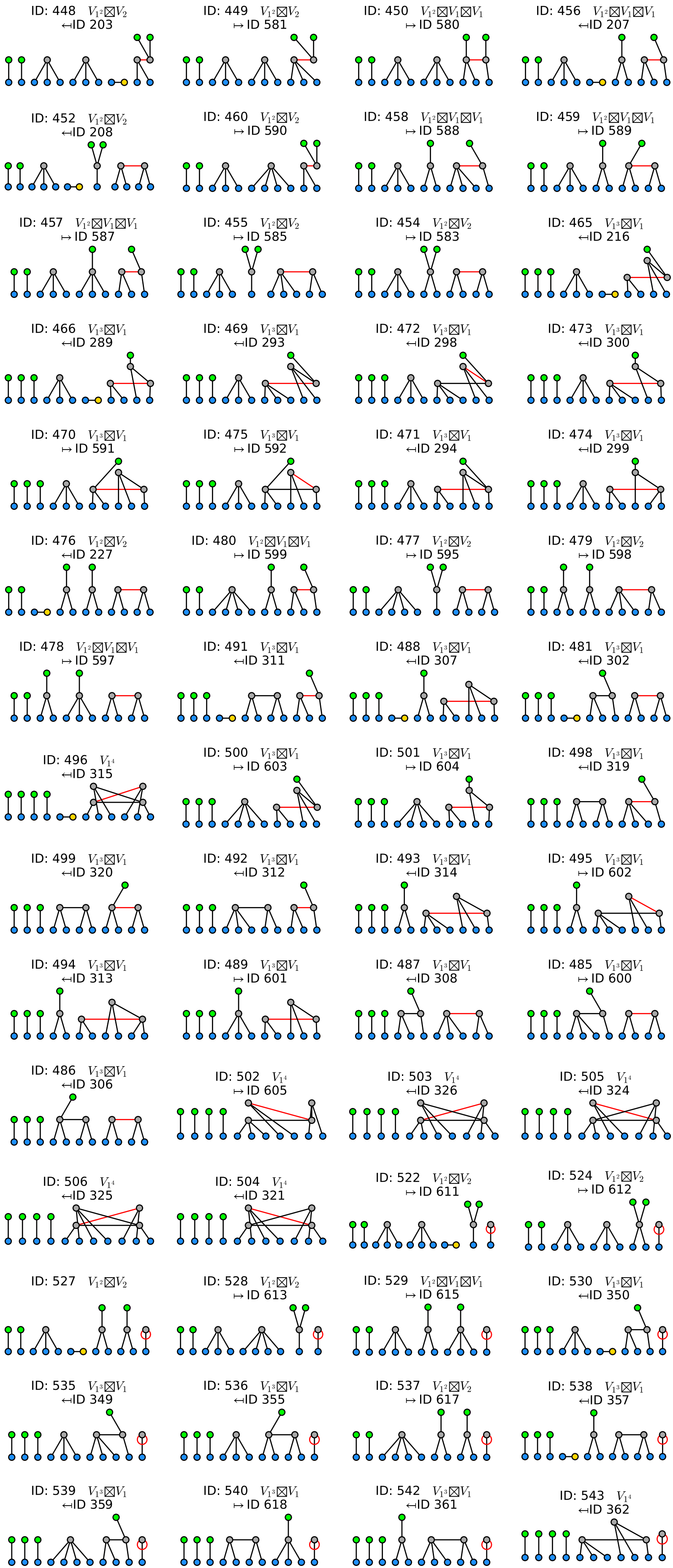
ID: 397 V_1^4
 \mapsto ID 254



ID: 398 V_1^4
 \mapsto ID 252



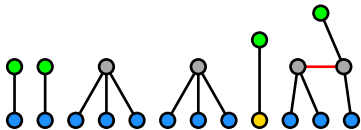
ID: 407 $V_1^2 \boxtimes V_1 \boxtimes V_1$ ID: 402 $V_1 \boxtimes V_1 \boxtimes V_2$ ID: 425 V_1^4
↔ ID 274ID: 411 $V_1^3 \boxtimes V_1$
↦ ID 556ID: 426 $V_1^3 \boxtimes V_1$
RedundantID: 408 $V_1^2 \boxtimes V_2$
RedundantID: 429 $V_1^3 \boxtimes V_1$
↔ ID 222ID: 409 $V_1^2 \boxtimes V_1 \boxtimes V_1$
↦ ID 552ID: 418 $V_1^2 \boxtimes V_1 \boxtimes V_1$
RedundantID: 406 $V_1 \boxtimes V_1 \boxtimes V_2$
RedundantID: 410 $V_1^3 \boxtimes V_1$
↔ ID 206ID: 422 $V_1^3 \boxtimes V_1$
↔ ID 218ID: 405 $V_1^2 \boxtimes V_1 \boxtimes V_1$ ID: 420 $V_1^3 \boxtimes V_1$
RedundantID: 404 $V_1^2 \boxtimes V_1 \boxtimes V_1$
RedundantID: 413 $V_1^2 \boxtimes V_1 \boxtimes V_1$
RedundantID: 403 $V_1 \boxtimes V_1 \boxtimes V_2$
RedundantID: 424 V_1^4
↔ ID 277ID: 434 V_1^4
RedundantID: 437 V_1^4
↔ ID 282ID: 421 $V_1^3 \boxtimes V_1$
↔ ID 276ID: 419 $V_1^3 \boxtimes V_1$
RedundantID: 433 $V_1^3 \boxtimes V_1$
RedundantID: 412 $V_1^2 \boxtimes V_2$
RedundantID: 428 $V_1^3 \boxtimes V_1$
↦ ID 566ID: 440 $V_1^3 \boxtimes V_1$
↦ ID 572ID: 417 $V_1^2 \boxtimes V_1 \boxtimes V_1$
↦ ID 560ID: 436 $V_1^3 \boxtimes V_1$
RedundantID: 415 $V_1^2 \boxtimes V_1 \boxtimes V_1$
RedundantID: 432 $V_1^2 \boxtimes V_1 \boxtimes V_1$
RedundantID: 414 $V_1 \boxtimes V_1 \boxtimes V_2$
RedundantID: 443 V_1^4
↦ ID 574ID: 435 $V_1^3 \boxtimes V_1$
RedundantID: 438 $V_1^3 \boxtimes V_1$
↔ ID 283ID: 431 $V_1^2 \boxtimes V_2$
RedundantID: 423 V_1^4
↔ ID 295ID: 441 V_1^4
↔ ID 285ID: 442 V_1^4
RedundantID: 427 $V_1^3 \boxtimes V_1$
RedundantID: 430 $V_1^3 \boxtimes V_1$
↔ ID 278ID: 439 $V_1^3 \boxtimes V_1$
RedundantID: 416 $V_1^2 \boxtimes V_2$
Redundant



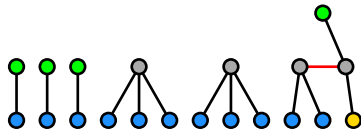
----- B,Birr cases with weight 11 relations

relation groups: 6 -----

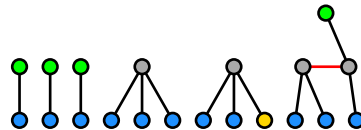
ID: 447 $V_1^2 \boxtimes V_1 \boxtimes V_1$
 \mapsto ID 579



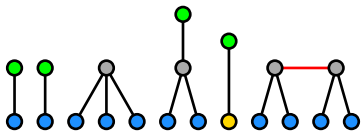
ID: 451 $V_1^3 \boxtimes V_1$
 Redundant



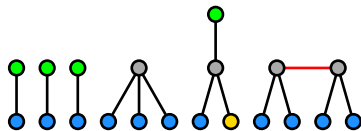
ID: 463 $V_1^3 \boxtimes V_1$
 \mapsto ID 593



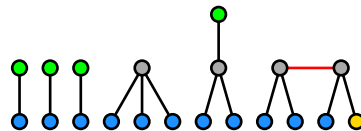
ID: 453 $V_1^2 \boxtimes V_1 \boxtimes V_1$
 \leftarrow ID 210



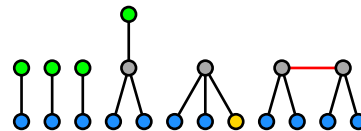
ID: 461 $V_1^3 \boxtimes V_1$
 \mapsto ID 594



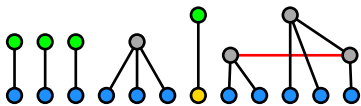
ID: 464 $V_1^3 \boxtimes V_1$
 Redundant



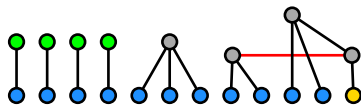
ID: 484 $V_1^3 \boxtimes V_1$
 \leftarrow ID 301



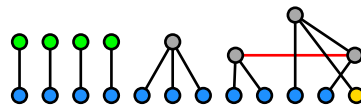
ID: 462 $V_1^3 \boxtimes V_1$
 \leftarrow ID 290



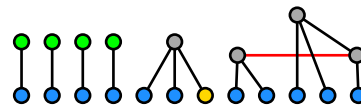
ID: 467 V_1^4
 \leftarrow ID 296



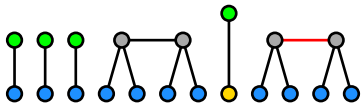
ID: 468 V_1^4
 Redundant



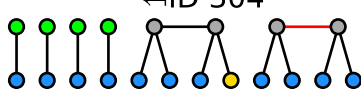
ID: 490 V_1^4
 \leftarrow ID 309



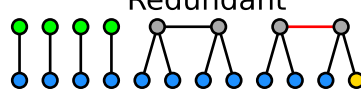
ID: 483 $V_1^3 \boxtimes V_1$
 \leftarrow ID 305



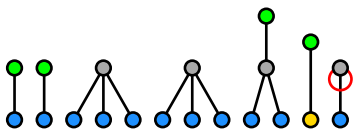
ID: 482 V_1^4
 \leftarrow ID 304



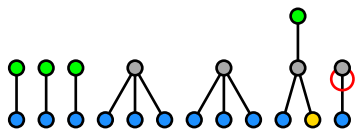
ID: 497 V_1^4
 Redundant



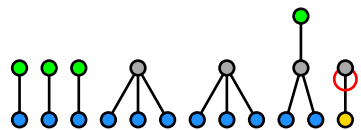
ID: 523 $V_1^2 \boxtimes V_1 \boxtimes V_1$



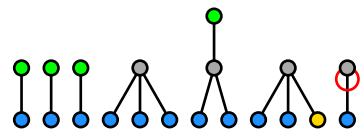
ID: 525 $V_1^3 \boxtimes V_1$
 \leftarrow ID 270



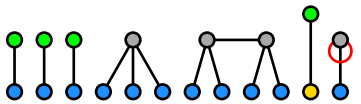
ID: 526 $V_1^3 \boxtimes V_1$
 Redundant



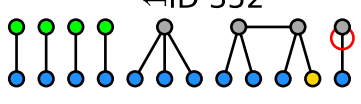
ID: 534 $V_1^3 \boxtimes V_1$
 \mapsto ID 616



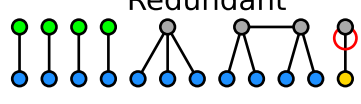
ID: 533 $V_1^3 \boxtimes V_1$
 \leftarrow ID 354



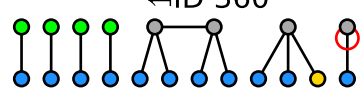
ID: 531 V_1^4
 \leftarrow ID 352



ID: 532 V_1^4
 Redundant

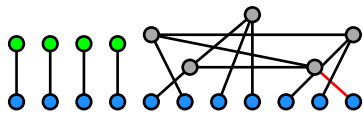


ID: 541 V_1^4
 \leftarrow ID 360

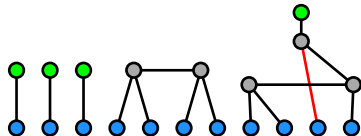


----- edges: 10 graphs: 69 -----
 ----- A2 case with weight 13 relations relation groups: 6 -----

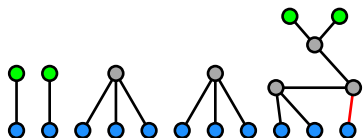
ID: 574 V_1^4
 \leftrightarrow ID 443



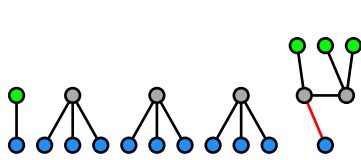
ID: 570 $V_1^3 \boxtimes V_1$
 Redundant



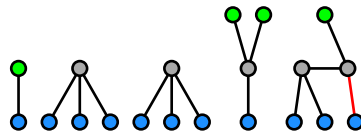
ID: 553 $V_1^2 \boxtimes V_2$
 \leftrightarrow ID 371



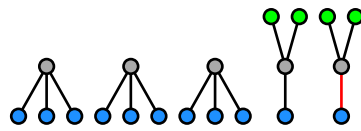
ID: 547 $V_1 \boxtimes V_1 \boxtimes V_2$



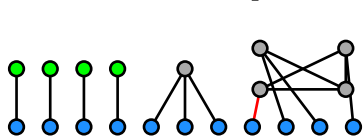
ID: 551 $V_1 \boxtimes V_2 \boxtimes V_1$
 Redundant



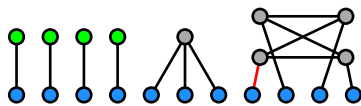
ID: 546 $V_2 \boxtimes V_2$
 Redundant



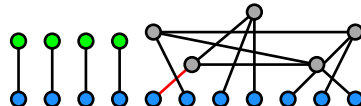
ID: 563 V_1^4



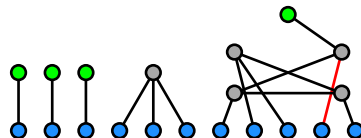
ID: 564 V_1^4
 Redundant



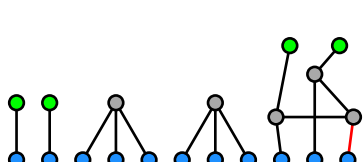
ID: 573 V_1^4
 Redundant



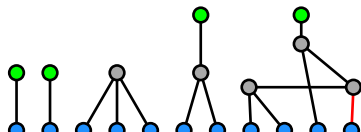
ID: 567 $V_1^3 \boxtimes V_1$
 Redundant



ID: 555 $V_1^2 \boxtimes V_1^2$



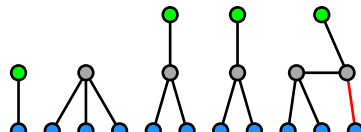
ID: 561 $V_1^2 \boxtimes V_1 \boxtimes V_1$
 \leftrightarrow ID 377



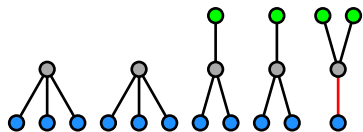
ID: 549 $V_1 \boxtimes V_1 \boxtimes V_1 \boxtimes V_1$



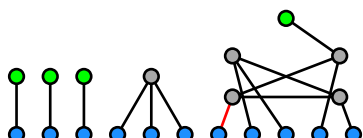
ID: 559 $V_1 \boxtimes V_2 \boxtimes V_1$
 Redundant



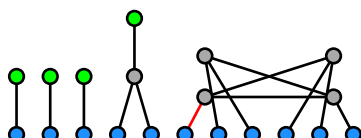
ID: 548 $V_2 \boxtimes V_2$
 Redundant



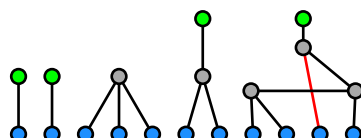
ID: 566 $V_1^3 \boxtimes V_1$
 \leftrightarrow ID 428



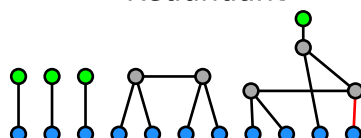
ID: 572 $V_1^3 \boxtimes V_1$
 \leftrightarrow ID 440



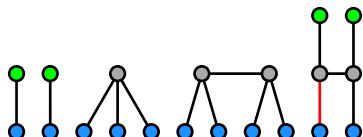
ID: 560 $V_1^2 \boxtimes V_1 \boxtimes V_1$
 \leftrightarrow ID 417



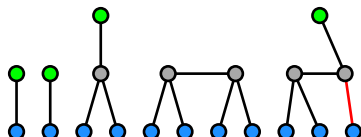
ID: 571 $V_1^3 \boxtimes V_1$
 Redundant



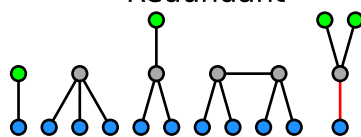
ID: 558 $V_1^2 \boxtimes V_1 \boxtimes V_1$
 Redundant



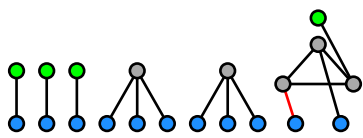
ID: 569 $V_1^2 \boxtimes V_1 \boxtimes V_1$
 Redundant



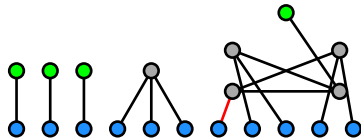
ID: 557 $V_1 \boxtimes V_1 \boxtimes V_2$
 Redundant



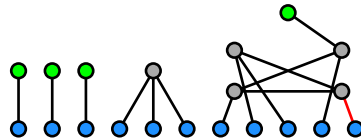
ID: 556 $V_1^3 \boxtimes V_1$
 \leftrightarrow ID 411



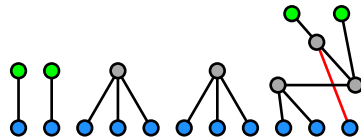
ID: 565 $V_1^3 \boxtimes V_1$
 \leftrightarrow ID 383



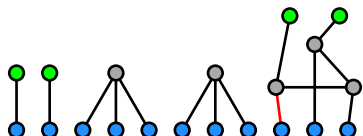
ID: 568 $V_1^3 \boxtimes V_1$
 Redundant



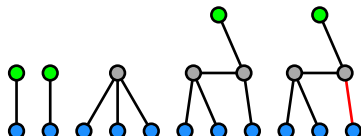
ID: 552 $V_1^2 \boxtimes V_1 \boxtimes V_1$
 \leftrightarrow ID 409



ID: 554 $V_1^2 \boxtimes V_1 \boxtimes V_1$
 Redundant



ID: 562 $V_1^2 \boxtimes V_1 \boxtimes V_1$
 Redundant



ID: 550 $V_1 \boxtimes V_1 \boxtimes V_2$
 Redundant

