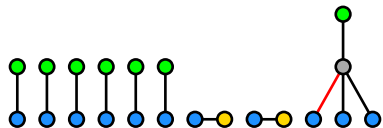
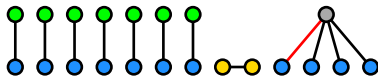


----- g,n: 5,7 graphs: 206 ----- Euler Characteristic (without resolving relations):
 ----- $5V_1^7 - 1V_1^6 \boxtimes V_1 - 1V_1^5 \boxtimes V_2 + 1V_1^5 \boxtimes V_1^2 - 4V_1^5 \boxtimes V_1 \boxtimes V_1 + 3V_1^4 \boxtimes V_1 \boxtimes V_2 + 1V_1^4 \boxtimes V_1 \boxtimes V_1 \boxtimes V_1$ -----
 edges: 4 graphs: 9 -----
 A3 case graphs: 8 -----

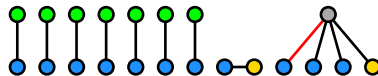
ID: 139 $V_1^6 \boxtimes V_1$



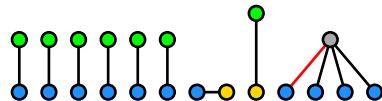
ID: 140 V_1^7



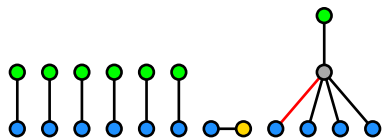
ID: 141 V_1^7



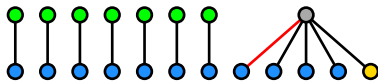
ID: 142 $V_1^6 \boxtimes V_1$



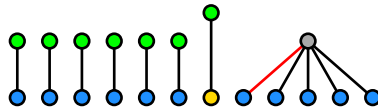
ID: 143 $V_1^6 \boxtimes V_1$



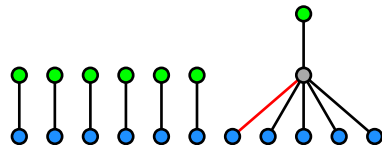
ID: 144 V_1^7



ID: 145 $V_1^6 \boxtimes V_1$

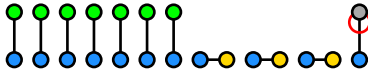


ID: 146 $V_1^6 \boxtimes V_1$



----- B,Birr cases without weight 11 relations graphs: 1 -----

ID: 197 V_{1^7}



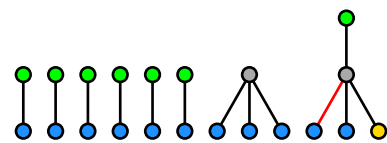
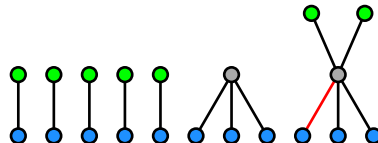
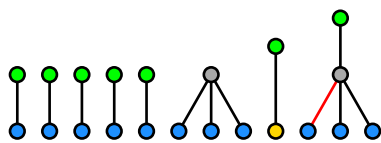
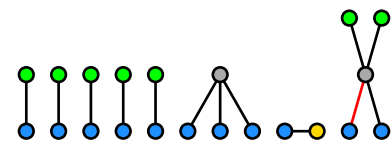
----- edges: 5 graphs: 57 -----
 ----- A3 case graphs: 24 -----

ID: 203 $V_1^5 \boxtimes V_2$

ID: 204 $V_1^5 \boxtimes V_1 \boxtimes V_1$

ID: 205 $V_1^5 \boxtimes V_2$

ID: 206 $V_1^6 \boxtimes V_1$

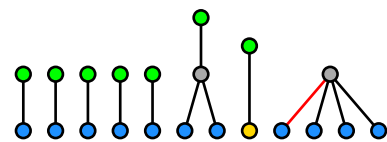
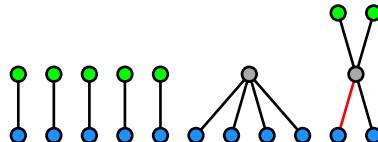
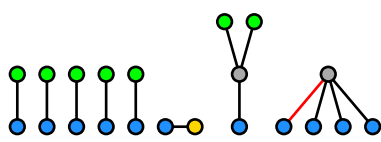
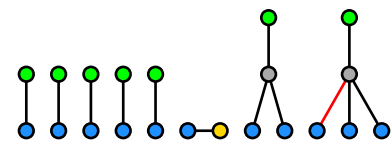


ID: 207 $V_1^5 \boxtimes V_1 \boxtimes V_1$

ID: 208 $V_1^5 \boxtimes V_2$

ID: 209 $V_1^5 \boxtimes V_2$

ID: 210 $V_1^5 \boxtimes V_1 \boxtimes V_1$

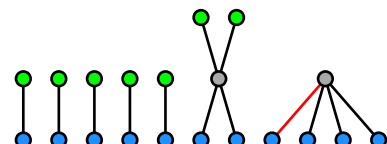
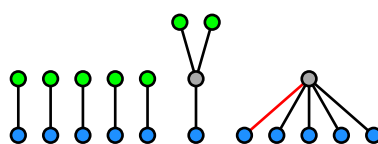
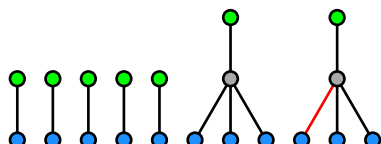
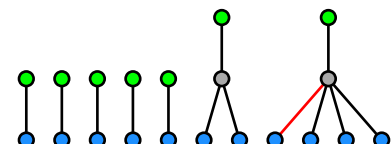


ID: 211 $V_1^5 \boxtimes V_1 \boxtimes V_1$

ID: 212 $V_1^5 \boxtimes V_1 \boxtimes V_1$

ID: 213 $V_1^5 \boxtimes V_2$

ID: 214 $V_1^5 \boxtimes V_2$

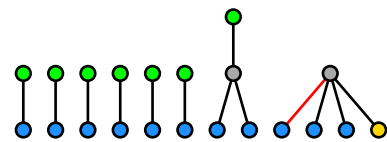
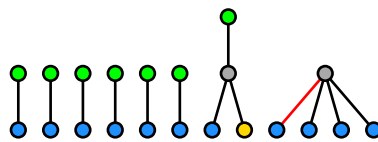
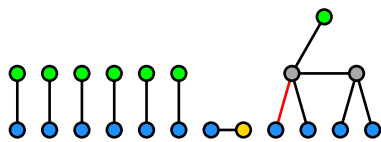
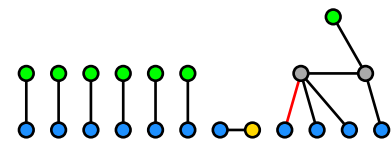


ID: 215 $V_1^6 \boxtimes V_1$

ID: 216 $V_1^6 \boxtimes V_1$

ID: 217 $V_1^6 \boxtimes V_1$

ID: 218 $V_1^6 \boxtimes V_1$

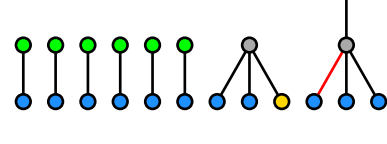
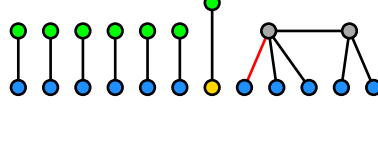
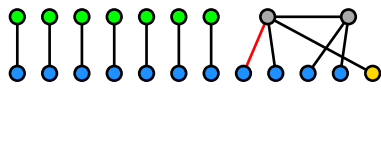
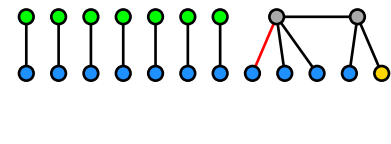


ID: 219 V_1^7

ID: 220 V_1^7

ID: 221 $V_1^6 \boxtimes V_1$

ID: 222 $V_1^6 \boxtimes V_1$

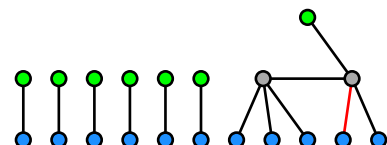
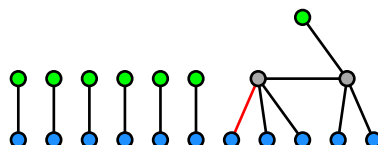
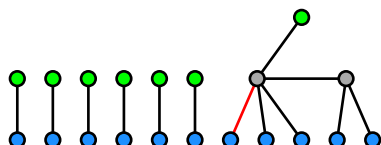
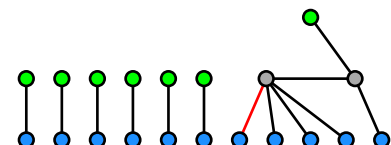


ID: 223 $V_1^6 \boxtimes V_1$

ID: 224 $V_1^6 \boxtimes V_1$

ID: 225 $V_1^6 \boxtimes V_1$

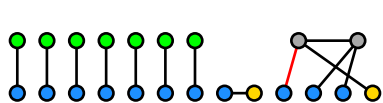
ID: 226 $V_1^6 \boxtimes V_1$



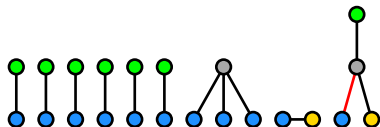
----- A2 case with weight 13 relations

relation groups: 3 -----

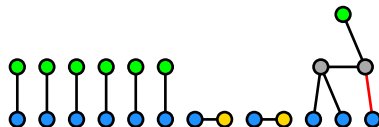
ID: 274 V_{1^7}



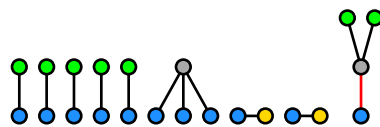
ID: 270 $V_{1^6} \boxtimes V_1$



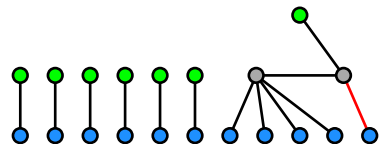
ID: 273 $V_{1^6} \boxtimes V_1$



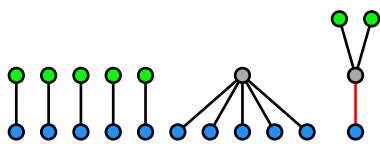
ID: 269 $V_{1^5} \boxtimes V_2$



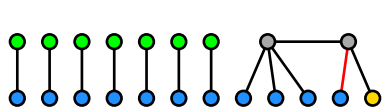
ID: 278 $V_{1^6} \boxtimes V_1$



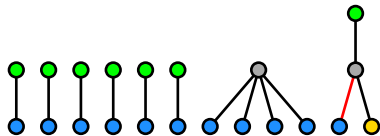
ID: 272 $V_{1^5} \boxtimes V_2$



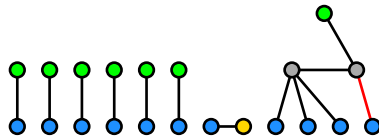
ID: 277 V_{1^7}



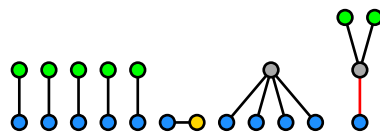
ID: 276 $V_{1^6} \boxtimes V_1$



ID: 275 $V_{1^6} \boxtimes V_1$

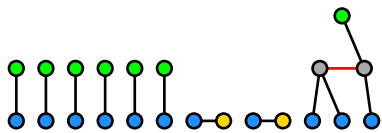


ID: 271 $V_{1^5} \boxtimes V_2$

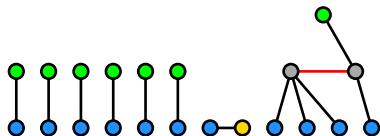


----- B,Birr cases without weight 11 relations graphs: 10 -----

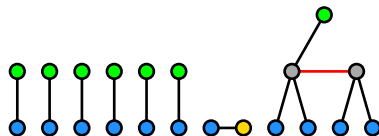
ID: 291 $V_{1^6} \boxtimes V_1$



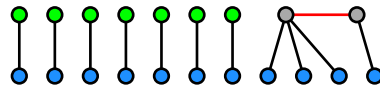
ID: 293 $V_{1^6} \boxtimes V_1$



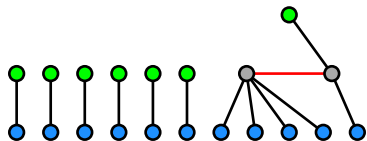
ID: 294 $V_{1^6} \boxtimes V_1$



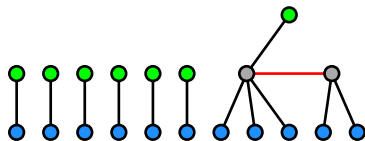
ID: 295 V_{1^7}



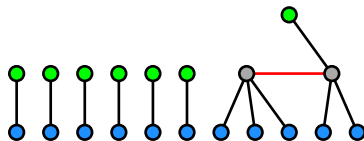
ID: 298 $V_{1^6} \boxtimes V_1$



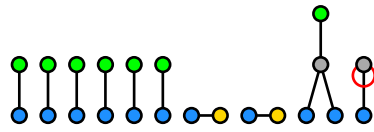
ID: 299 $V_{1^6} \boxtimes V_1$



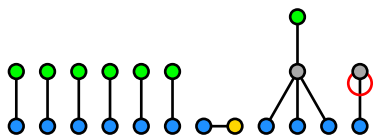
ID: 300 $V_{1^6} \boxtimes V_1$



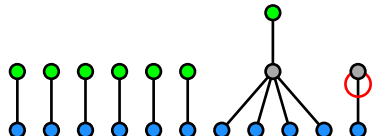
ID: 349 $V_{1^6} \boxtimes V_1$



ID: 350 $V_{1^6} \boxtimes V_1$



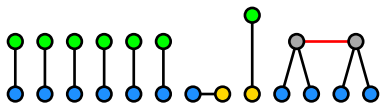
ID: 355 $V_{1^6} \boxtimes V_1$



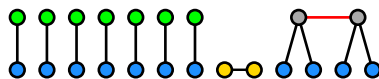
----- B,Birr cases with weight 11 relations

relation groups: 4 -----

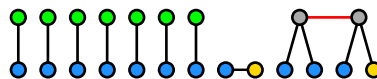
ID: 289 $V_1^6 \boxtimes V_1$



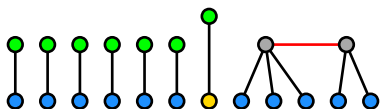
ID: 288 V_1^7



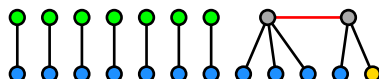
ID: 292 V_1^7



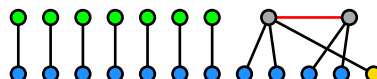
ID: 290 $V_1^6 \boxtimes V_1$



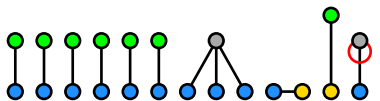
ID: 296 V_1^7



ID: 297 V_1^7



ID: 348 $V_1^6 \boxtimes V_1$



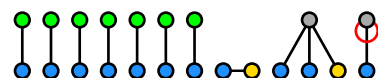
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ID: 347 V_1^7



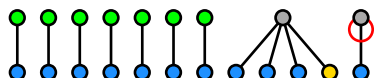
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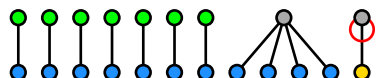
ID: 354 $V_1^6 \boxtimes V_1$



ID: 352 V_1^7

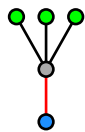


ID: 353 V_1^7

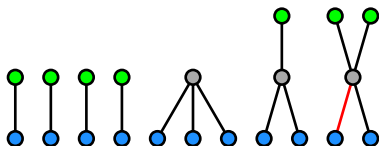


----- edges: 6 graphs: 91 -----
 ----- A3 case graphs: 19 -----

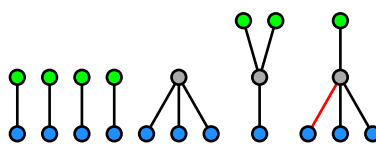
ID: 368 $V_1^4 \boxtimes V_3$



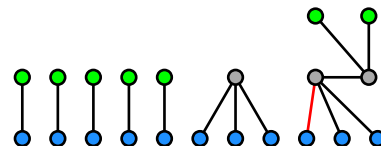
ID: 369 $V_1^4 \boxtimes V_1 \boxtimes V_2$



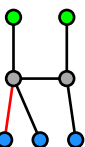
ID: 370 $V_1^4 \boxtimes V_2 \boxtimes V_1$



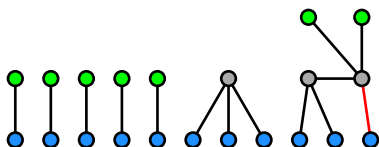
ID: 371 $V_1^5 \boxtimes V_2$



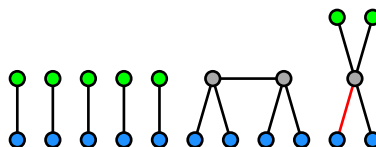
ID: 372 $V_1^5 \boxtimes V_1 \boxtimes V_1$



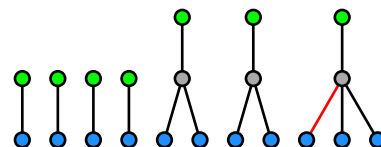
ID: 373 $V_1^5 \boxtimes V_2$



ID: 374 $V_1^5 \boxtimes V_2$



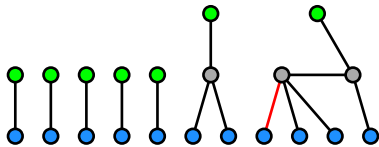
ID: 375 $V_1^4 \boxtimes V_2 \boxtimes V_1$



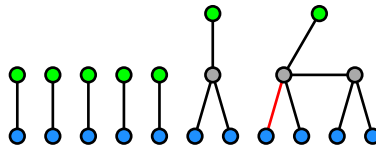
ID: 376 $V_1^4 \boxtimes V_1 \boxtimes V_2$



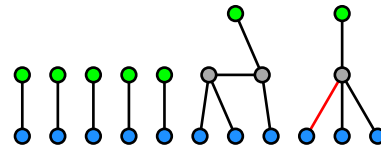
ID: 377 $V_1^5 \boxtimes V_1 \boxtimes V_1$



ID: 378 $V_1^5 \boxtimes V_1 \boxtimes V_1$



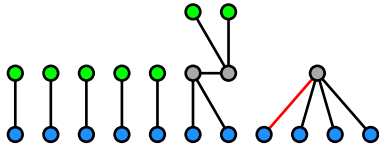
ID: 379 $V_1^5 \boxtimes V_1 \boxtimes V_1$



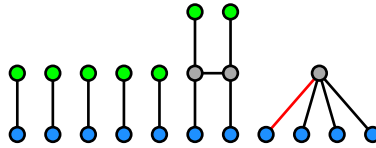
ID: 380 $V_1^5 \boxtimes V_2$



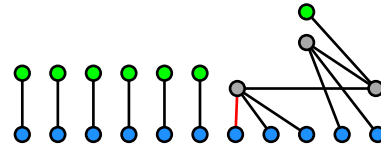
ID: 381 $V_1^5 \boxtimes V_2$



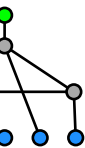
ID: 382 $V_1^5 \boxtimes V_2$



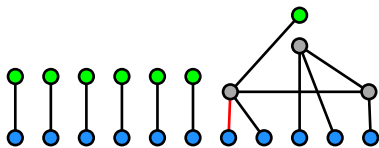
ID: 383 $V_1^6 \boxtimes V_1$



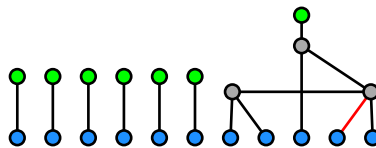
ID: 384 $V_1^6 \boxtimes V_1$



ID: 385 $V_1^6 \boxtimes V_1$



ID: 386 $V_1^6 \boxtimes V_1$

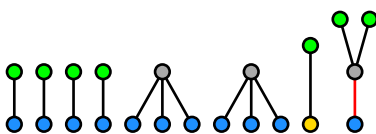
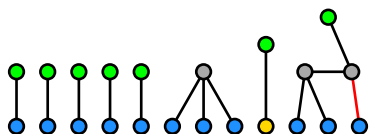


----- A2 case with weight 13 relations

relation groups: 7 -----

ID: 407 $V_1^5 \boxtimes V_1 \boxtimes V_1$

ID: 402 $V_1^4 \boxtimes V_1 \boxtimes V_2$

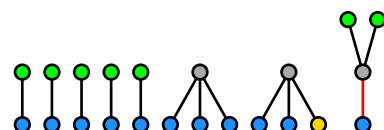
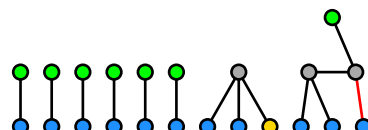
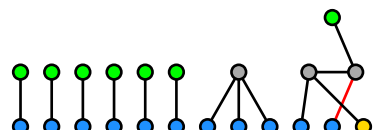
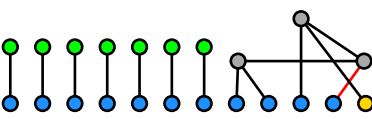


ID: 425 V_1^7

ID: 411 $V_1^6 \boxtimes V_1$

ID: 426 $V_1^6 \boxtimes V_1$

ID: 408 $V_1^5 \boxtimes V_2$

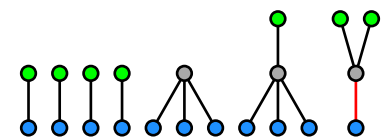
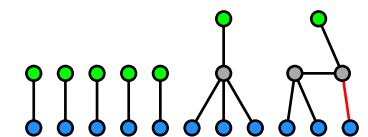
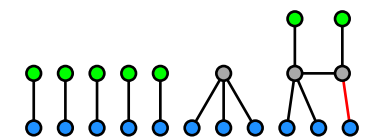
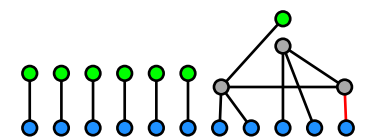


ID: 429 $V_1^6 \boxtimes V_1$

ID: 409 $V_1^5 \boxtimes V_1 \boxtimes V_1$

ID: 418 $V_1^5 \boxtimes V_1 \boxtimes V_1$

ID: 406 $V_1^4 \boxtimes V_1 \boxtimes V_2$

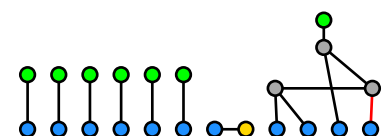
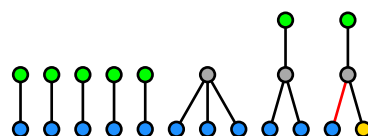
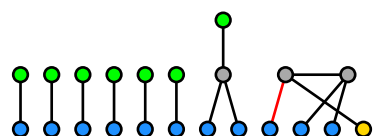
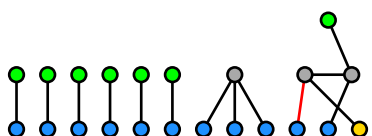


ID: 410 $V_1^6 \boxtimes V_1$

ID: 422 $V_1^6 \boxtimes V_1$

ID: 405 $V_1^5 \boxtimes V_1 \boxtimes V_1$

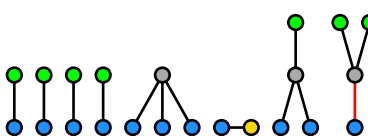
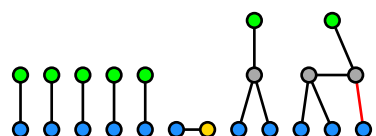
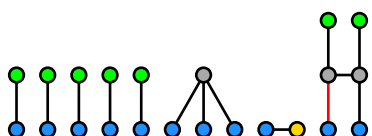
ID: 420 $V_1^6 \boxtimes V_1$



ID: 404 $V_1^5 \boxtimes V_1 \boxtimes V_1$

ID: 413 $V_1^5 \boxtimes V_1 \boxtimes V_1$

ID: 403 $V_1^4 \boxtimes V_1 \boxtimes V_2$

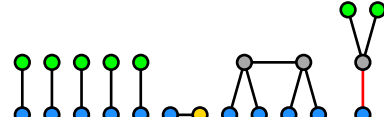
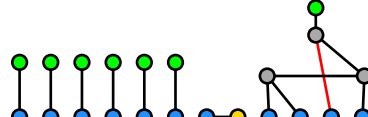
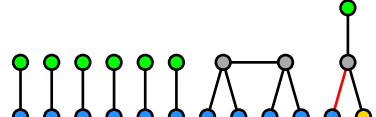
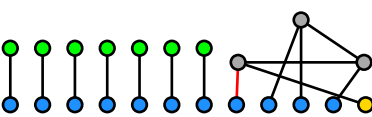


ID: 424 V_1^7

ID: 421 $V_1^6 \boxtimes V_1$

ID: 419 $V_1^6 \boxtimes V_1$

ID: 412 $V_1^5 \boxtimes V_2$

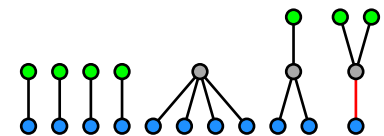
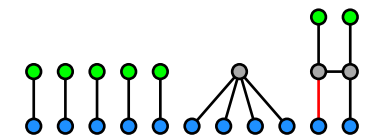
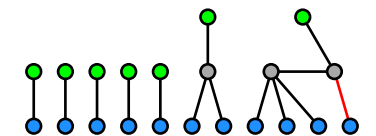
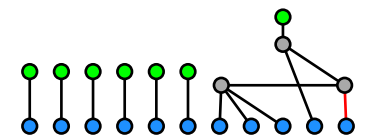


ID: 428 $V_1^6 \boxtimes V_1$

ID: 417 $V_1^5 \boxtimes V_1 \boxtimes V_1$

ID: 415 $V_1^5 \boxtimes V_1 \boxtimes V_1$

ID: 414 $V_1^4 \boxtimes V_1 \boxtimes V_2$

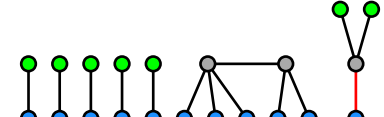
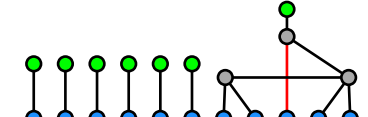
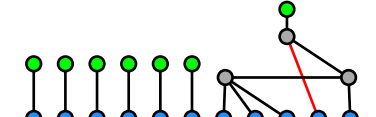
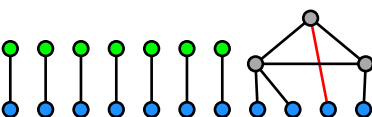


ID: 423 V_1^7

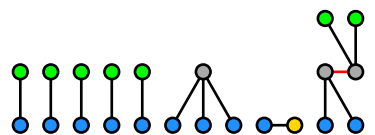
ID: 427 $V_1^6 \boxtimes V_1$

ID: 430 $V_1^6 \boxtimes V_1$

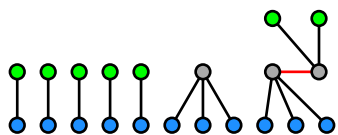
ID: 416 $V_1^5 \boxtimes V_2$



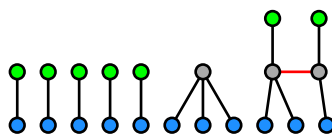
ID: 448 $V_1^5 \boxtimes V_2$



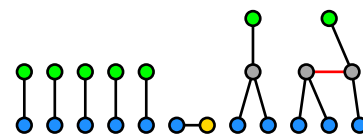
ID: 449 $V_1^5 \boxtimes V_2$



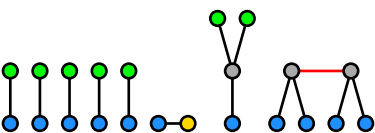
ID: 450 $V_1^5 \boxtimes V_1 \boxtimes V_1$



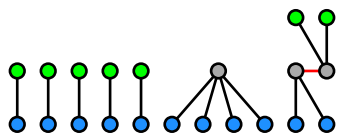
ID: 456 $V_1^5 \boxtimes V_1 \boxtimes V_1$



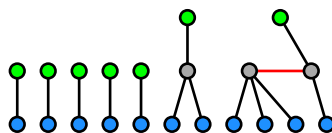
ID: 452 $V_1^5 \boxtimes V_2$



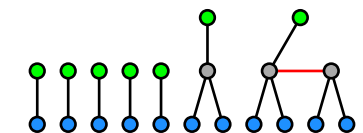
ID: 460 $V_1^5 \boxtimes V_2$



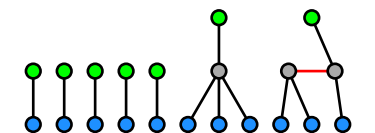
ID: 458 $V_1^5 \boxtimes V_1 \boxtimes V_1$



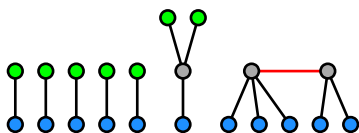
ID: 459 $V_1^5 \boxtimes V_1 \boxtimes V_1$



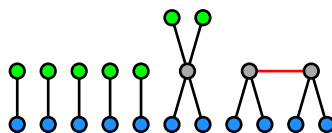
ID: 457 $V_1^5 \boxtimes V_1 \boxtimes V_1$



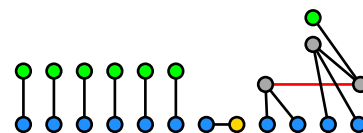
ID: 455 $V_1^5 \boxtimes V_2$



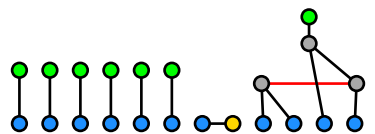
ID: 454 $V_1^5 \boxtimes V_2$



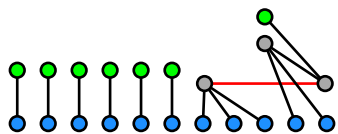
ID: 465 $V_1^6 \boxtimes V_1$



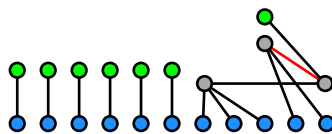
ID: 466 $V_1^6 \boxtimes V_1$



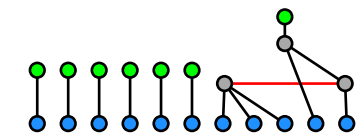
ID: 469 $V_1^6 \boxtimes V_1$



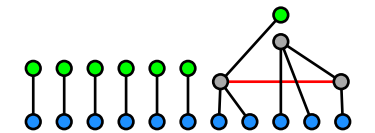
ID: 472 $V_1^6 \boxtimes V_1$



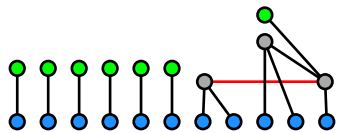
ID: 473 $V_1^6 \boxtimes V_1$



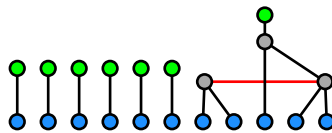
ID: 470 $V_1^6 \boxtimes V_1$



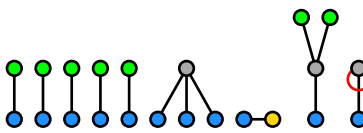
ID: 471 $V_1^6 \boxtimes V_1$



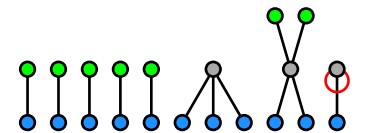
ID: 474 $V_1^6 \boxtimes V_1$



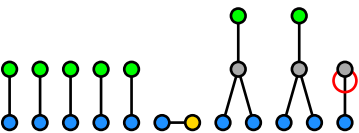
ID: 520 $V_1^5 \boxtimes V_2$



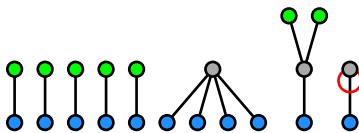
ID: 522 $V_1^5 \boxtimes V_2$



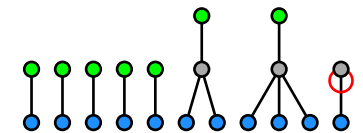
ID: 525 $V_1^5 \boxtimes V_2$



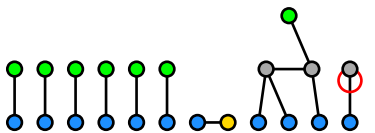
ID: 526 $V_1^5 \boxtimes V_2$



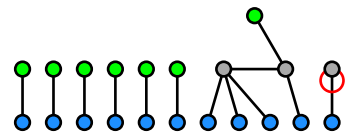
ID: 527 $V_1^5 \boxtimes V_1 \boxtimes V_1$



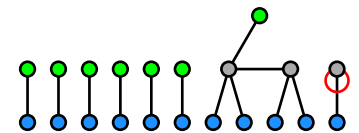
ID: 528 $V_1^6 \boxtimes V_1$



ID: 533 $V_1^6 \boxtimes V_1$

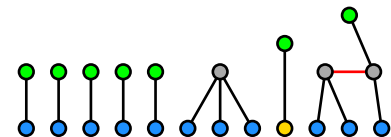


ID: 534 $V_1^6 \boxtimes V_1$

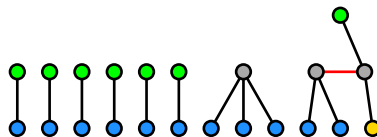


----- B,Birr cases with weight 11 relations relation groups: 5 -----

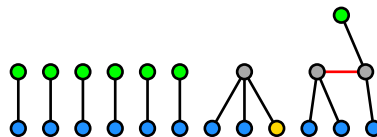
ID: 447 $V_1^5 \boxtimes V_1 \boxtimes V_1$



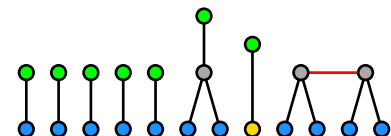
ID: 451 $V_1^6 \boxtimes V_1$



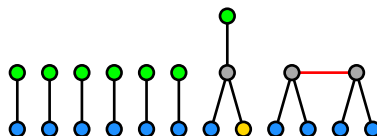
ID: 463 $V_1^6 \boxtimes V_1$



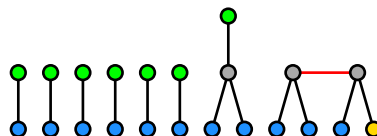
ID: 453 $V_1^5 \boxtimes V_1 \boxtimes V_1$



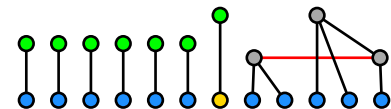
ID: 461 $V_1^6 \boxtimes V_1$



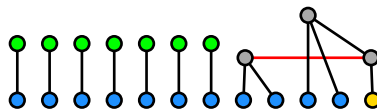
ID: 464 $V_1^6 \boxtimes V_1$



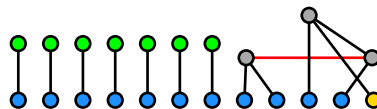
ID: 462 $V_1^6 \boxtimes V_1$



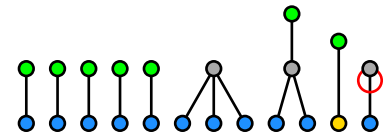
ID: 467 V_1^7



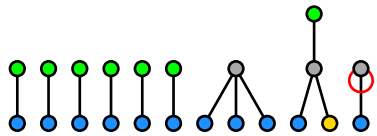
ID: 468 V_1^7



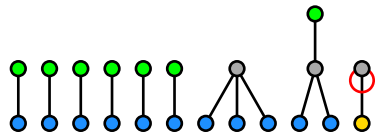
ID: 521 $V_1^5 \boxtimes V_1 \boxtimes V_1$



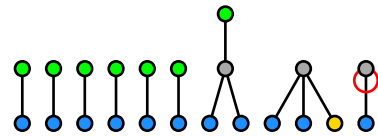
ID: 523 $V_1^6 \boxtimes V_1$



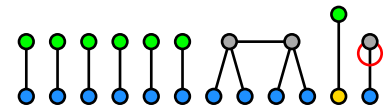
ID: 524 $V_1^6 \boxtimes V_1$



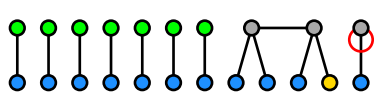
ID: 532 $V_1^6 \boxtimes V_1$



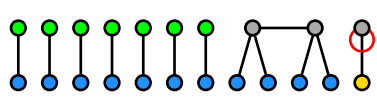
ID: 531 $V_1^6 \boxtimes V_1$



ID: 529 V_1^7

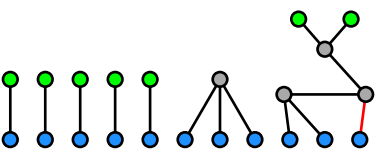


ID: 530 V_1^7

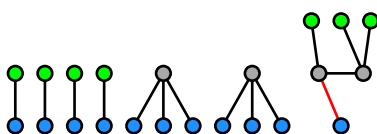


----- edges: 7 graphs: 49 -----
 ----- A2 case with weight 13 relations relation groups: 5 -----

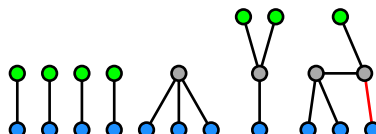
ID: 551 $V_1^5 \boxtimes V_2$



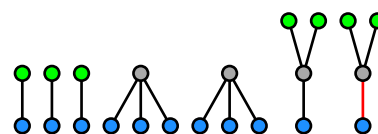
ID: 545 $V_1^4 \boxtimes V_1 \boxtimes V_2$



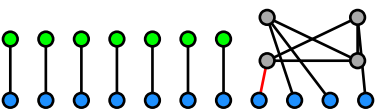
ID: 549 $V_1^4 \boxtimes V_2 \boxtimes V_1$



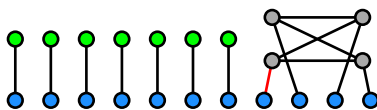
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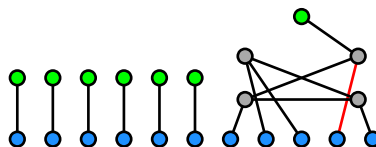
ID: 561 V_1^7



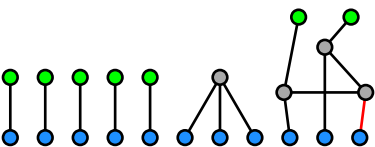
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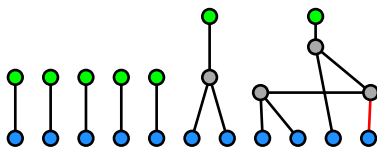
ID: 565 $V_1^6 \boxtimes V_1$



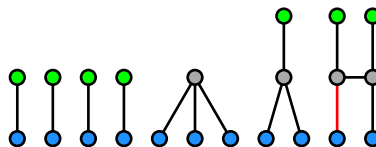
ID: 553 $V_1^5 \boxtimes V_1^2$



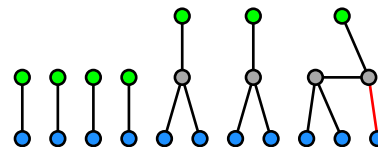
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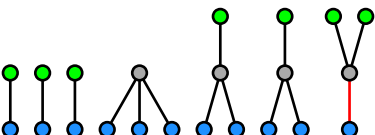
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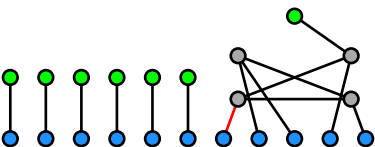
ID: 557 $V_1^4 \boxtimes V_2 \boxtimes V_1$



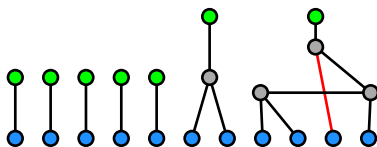
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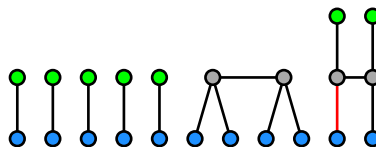
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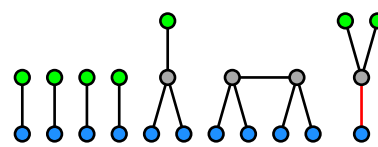
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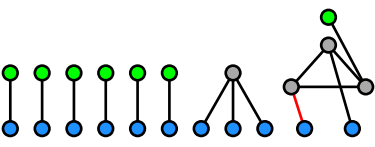
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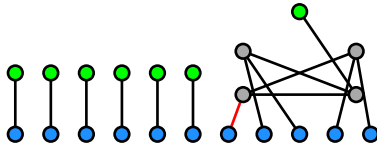
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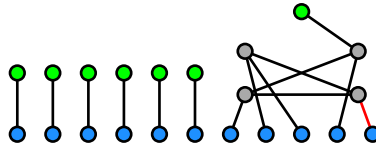
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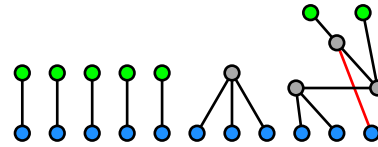
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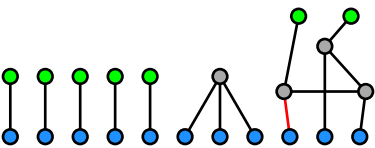
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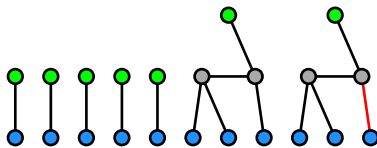
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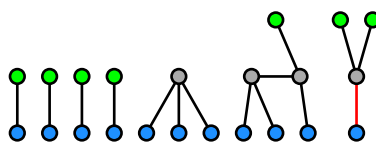
ID: 552 $V_1^5 \boxtimes V_1 \boxtimes V_1$



ID: 560 $V_1^5 \boxtimes V_1 \boxtimes V_1$



ID: 548 $V_1^4 \boxtimes V_1 \boxtimes V_2$



graphs: 26 -----

ID: 574 $V_1^4 \boxtimes V_1 \boxtimes V_2$ 