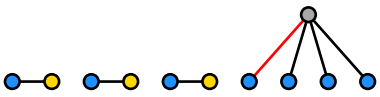
---- excess: 4 (g,n): (1, 13), (3, 10), (5, 7), (7, 4), (9, 1) graphs: 490 ----

--------- edges: 10-n graphs: 10 ---------

--- A3 case graphs: 10 ---

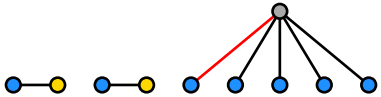
ID: 129 V_{1^n}

n: 4 1 ↦ ID 152



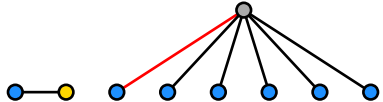
ID: 130 V_{1^n}

n: 4 1 ↦ ID 148



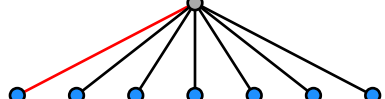
ID: 131 V_{1^n}

n: 4 1 ↦ ID 153



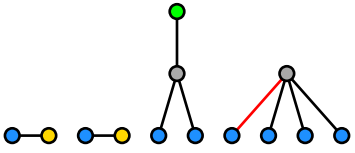
ID: 132 V_{1^n}

n: 4 1 ↦ ID 166

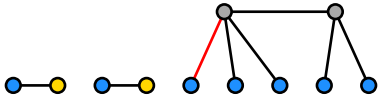


--------- edges: 11-n graphs: 64 ---------
--- A3 case graphs: 45 ---

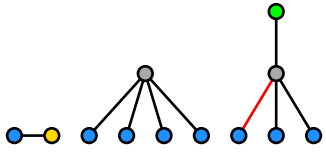
ID: 147 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 $\mapsto$ ID 243



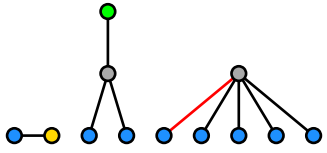
ID: 148 V_{1^n}
n: 4 1 $\leftarrow\!\shortmid$ ID 130



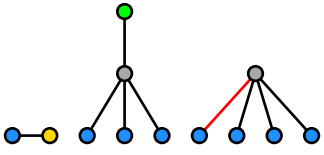
ID: 149 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 $\mapsto$ ID 232



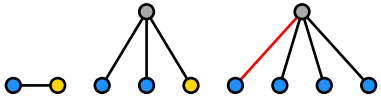
ID: 150 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 $\mapsto$ ID 233



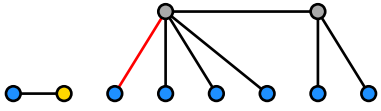
ID: 151 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 $\mapsto$ ID 234



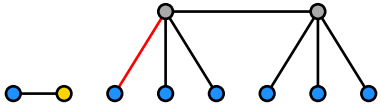
ID: 152 V_{1^n}
n: 4 1 $\leftarrow\!\shortmid$ ID 129



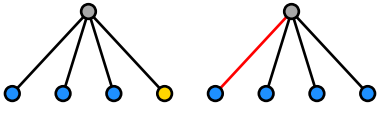
ID: 153 V_{1^n}
n: 4 1 $\leftarrow\!\shortmid$ ID 131



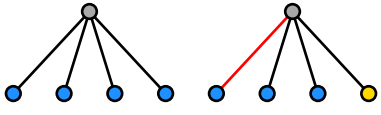
ID: 154 V_{1^n}
n: 4 1 $\mapsto$ ID 235



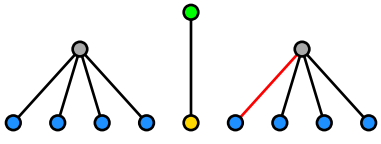
ID: 155 V_{1^n}
n: 4 1 $\mapsto$ ID 238



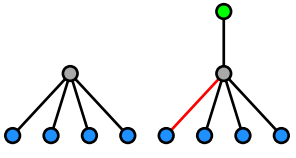
ID: 156 V_{1^n}
n: 4 1 $\mapsto$ ID 239



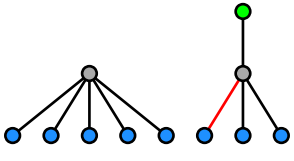
ID: 157 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 $\mapsto$ ID 240



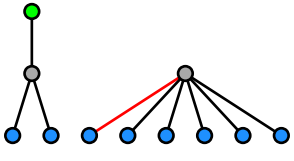
ID: 158 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 $\mapsto$ ID 241



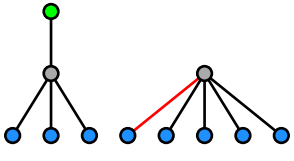
ID: 159 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 $\mapsto$ ID 242



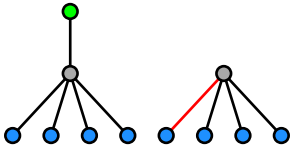
ID: 160 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 $\mapsto$ ID 245



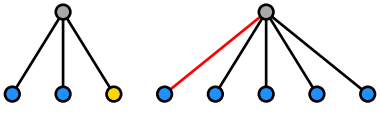
ID: 161 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 $\mapsto$ ID 247



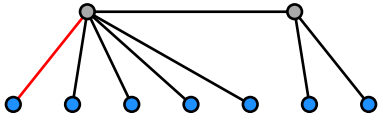
ID: 162 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 $\mapsto$ ID 249



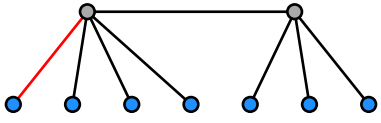
ID: 163 V_{1^n}
n: 4 1 $\mapsto$ ID 250



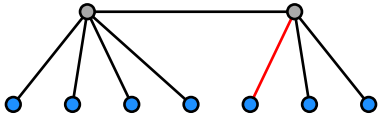
ID: 164 V_{1^n}
n: 4 1 $\mapsto$ ID 253



ID: 165 V_{1^n}
n: 4 1 $\mapsto$ ID 251

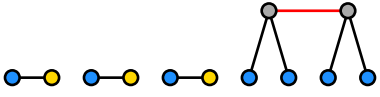


ID: 166 V_{1^n}
n: 4 1 $\leftarrow\!\shortmid$ ID 132

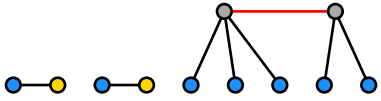


--- B,Birr cases without weight 11 relations graphs: 19 ---

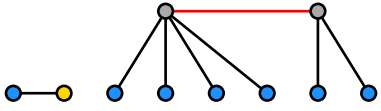
ID: 184 V_{1^n}
n: 4 1 ↦ ID 303



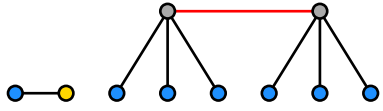
ID: 185 V_{1^n}
n: 4 1 ↦ ID 310



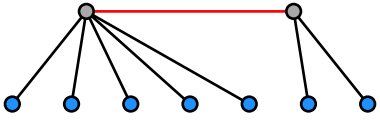
ID: 186 V_{1^n}
n: 4 1 ↦ ID 316



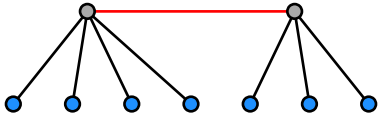
ID: 187 V_{1^n}
n: 4 1 ↦ ID 317



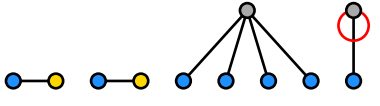
ID: 188 V_{1^n}
n: 4 1 ↦ ID 323



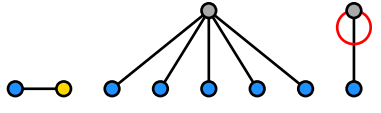
ID: 189 V_{1^n}
n: 4 1 ↦ ID 322



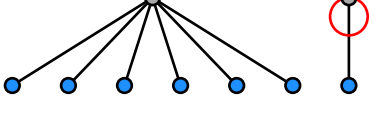
ID: 198 V_{1^n}
n: 4 1 ↦ ID 356



ID: 199 V_{1^n}
n: 4 1 ↦ ID 358

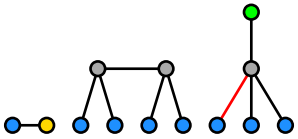


ID: 200 V_{1^n}
n: 4 1 ↦ ID 363

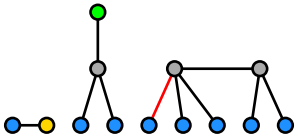


--------- edges: 12-n graphs: 165 ---------
--- A3 case graphs: 66 ---

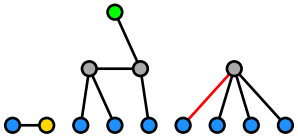
ID: 232 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 149



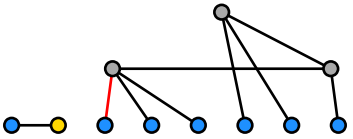
ID: 233 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 150



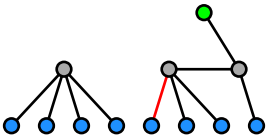
ID: 234 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 151



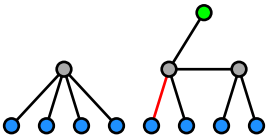
ID: 235 V_{1^n}
n: 4 1 ↤ID 154



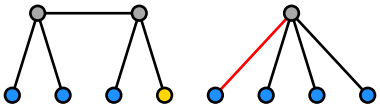
ID: 236 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ID 392



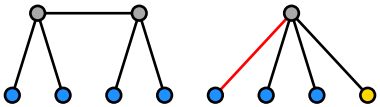
ID: 237 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ID 393



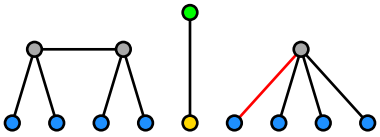
ID: 238 V_{1^n}
n: 4 1 ↤ID 155



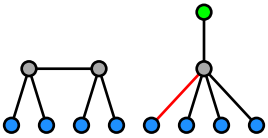
ID: 239 V_{1^n}
n: 4 1 ↤ID 156



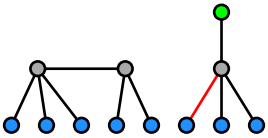
ID: 240 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 157



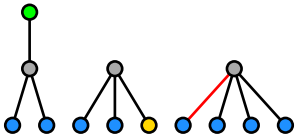
ID: 241 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 158



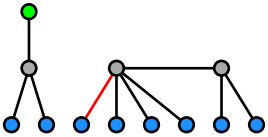
ID: 242 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 159



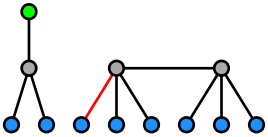
ID: 243 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 147



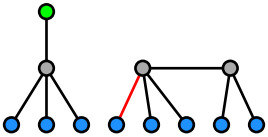
ID: 244 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ID 394



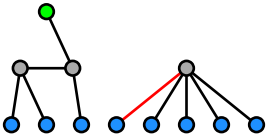
ID: 245 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 160



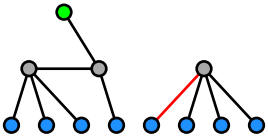
ID: 246 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ID 395



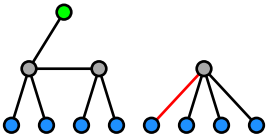
ID: 247 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 161



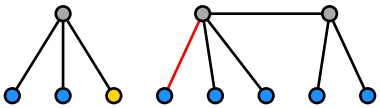
ID: 248 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ID 396



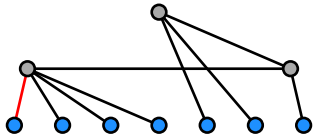
ID: 249 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 162



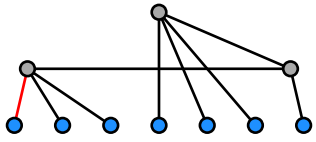
ID: 250 V_{1^n}
n: 4 1 ↤ID 163



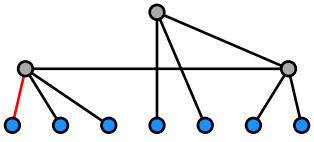
ID: 251 V_{1^n}
n: 4 1 ↤ID 165



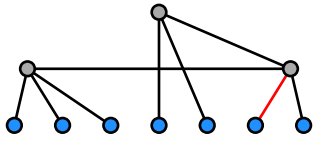
ID: 252 V_{1^n}
n: 4 1 ↦ID 398



ID: 253 V_{1^n}
n: 4 1 ↤ID 164

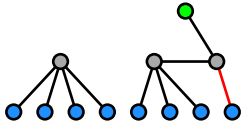


ID: 254 V_{1^n}
n: 4 1 ↦ID 397

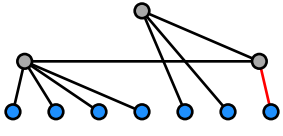


--- A2 case with weight 13 relations relation groups: 4 ---

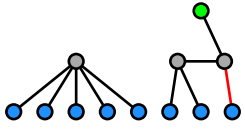
ID: 283 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 $\mapsto$ ID 438



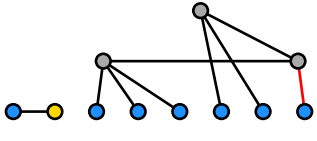
ID: 285 V_{1^n}
n: 4 1 $\mapsto$ ID 441



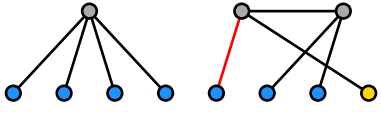
ID: 284 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 $\mapsto$ ID 439 RED



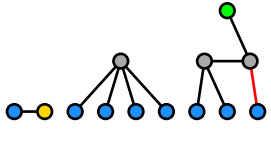
ID: 281 V_{1^n}
n: 4 1 $\mapsto$ ID 434 RED



ID: 282 V_{1^n}
n: 4 1 $\mapsto$ ID 437

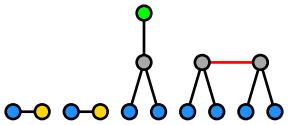


ID: 280 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 $\mapsto$ ID 433 RED

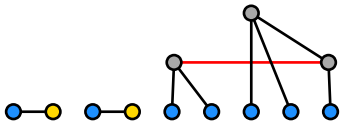


--- B,Birr cases without weight 11 relations graphs: 60 ---

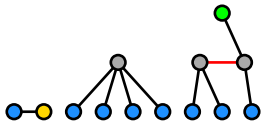
ID: 301 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 484



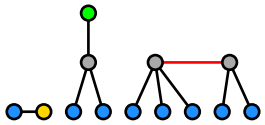
ID: 310 V_{1^n}
n: 4 1 ↤ ID 185



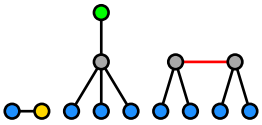
ID: 311 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 491



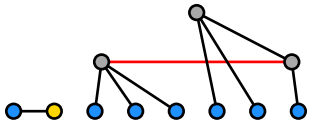
ID: 307 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 488



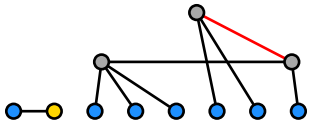
ID: 302 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 481



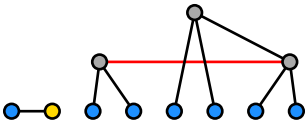
ID: 315 V_{1^n}
n: 4 1 ↦ ID 496



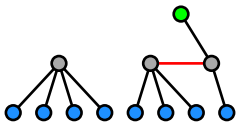
ID: 317 V_{1^n}
n: 4 1 ↤ ID 187



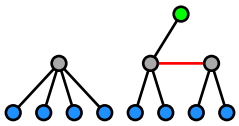
ID: 316 V_{1^n}
n: 4 1 ↤ ID 186



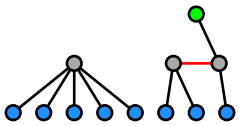
ID: 319 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 498



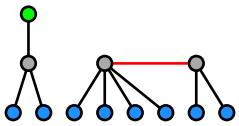
ID: 320 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 499



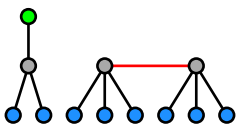
ID: 312 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 492



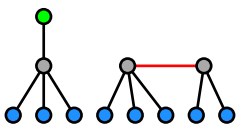
ID: 313 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 494



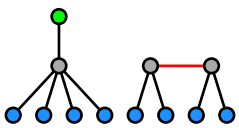
ID: 314 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 493



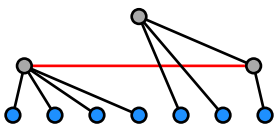
ID: 308 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 487



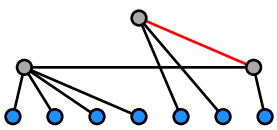
ID: 306 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 486



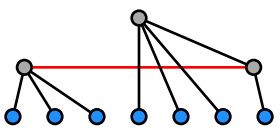
ID: 321 V_{1^n}
n: 4 1 ↦ ID 504



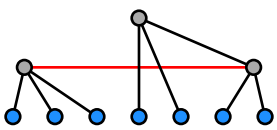
ID: 324 V_{1^n}
n: 4 1 ↦ ID 505



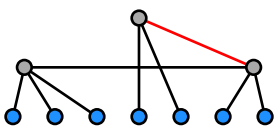
ID: 325 V_{1^n}
n: 4 1 ↦ ID 506



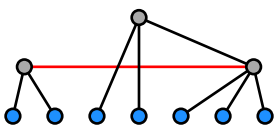
ID: 322 V_{1^n}
n: 4 1 ↤ ID 189



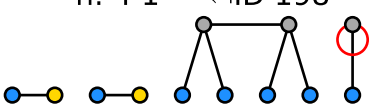
ID: 326 V_{1^n}
n: 4 1 ↦ ID 503



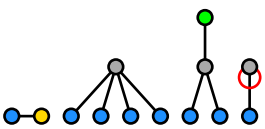
ID: 323 V_{1^n}
n: 4 1 ↤ ID 188



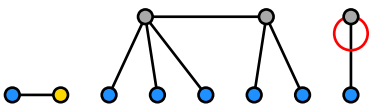
ID: 356 V_{1^n}
n: 4 1 ↤ ID 198



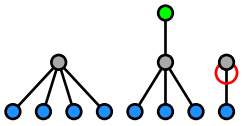
ID: 357 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 538



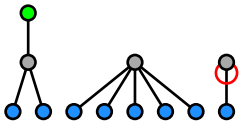
ID: 358 V_{1^n}
n: 4 1 ↤ ID 199



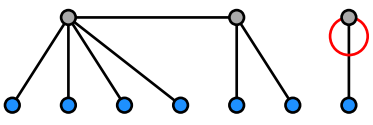
ID: 359 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 539



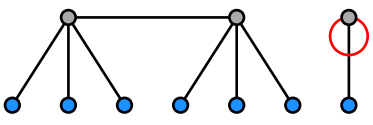
ID: 361 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 542



ID: 362 V_{1^n}
n: 4 1 ↦ ID 543

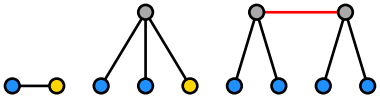


ID: 363 V_{1^n}
n: 4 1 ↤ ID 200

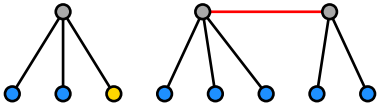


--- B,Birr cases with weight 11 relations relation groups: 5 ---

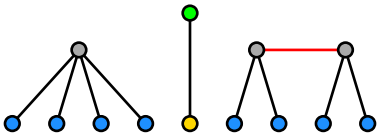
ID: 303 V_{1^n}
n: 4 1 ↤ID 184



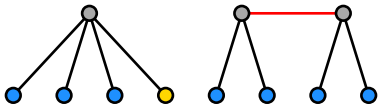
ID: 309 V_{1^n}
n: 4 1 ↦ID 490



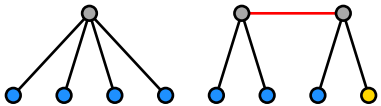
ID: 305 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ID 483



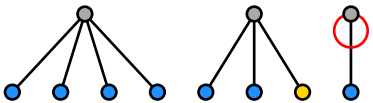
ID: 304 V_{1^n}
n: 4 1 ↦ID 482



ID: 318 V_{1^n}
n: 4 1 ↦ID 497 RED

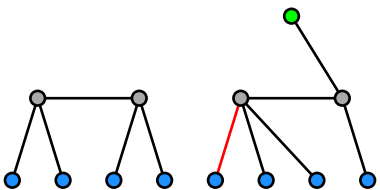


ID: 360 V_{1^n}
n: 4 1 ↦ID 541

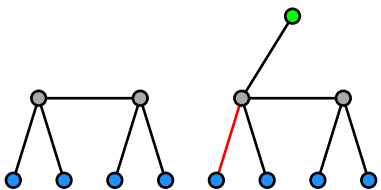


--------- edges: 13-n graphs: 178 ---------
--- A3 case graphs: 34 ---

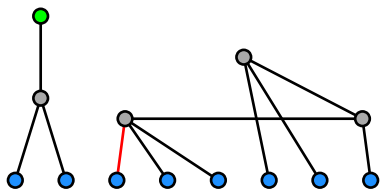
ID: 392 $V_1{}^{n-1} \boxtimes V_1$
n: 4 1 ↤ID 236



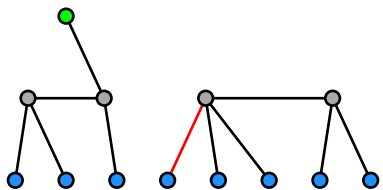
ID: 393 $V_1{}^{n-1} \boxtimes V_1$
n: 4 1 ↤ID 237



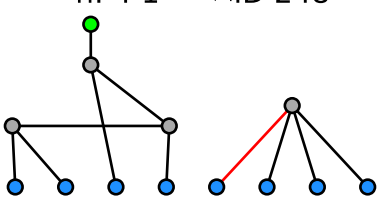
ID: 394 $V_1{}^{n-1} \boxtimes V_1$
n: 4 1 ↤ID 244



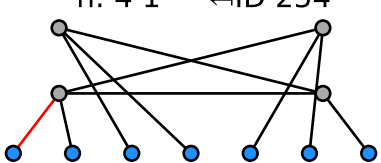
ID: 395 $V_1{}^{n-1} \boxtimes V_1$
n: 4 1 ↤ID 246



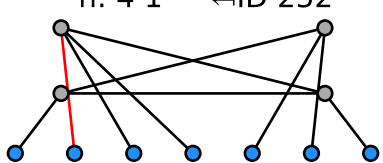
ID: 396 $V_1{}^{n-1} \boxtimes V_1$
n: 4 1 ↤ID 248



ID: 397 $V_1{}^{n}$
n: 4 1 ↤ID 254

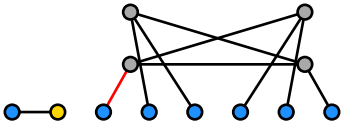


ID: 398 $V_1{}^{n}$
n: 4 1 ↤ID 252

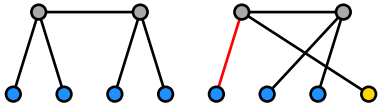


--- A2 case with weight 13 relations relation groups: 8 ---

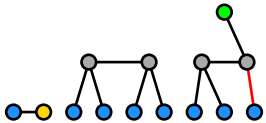
ID: 434 V_{1^n}
n: 4 1 ↤ID 281 RED



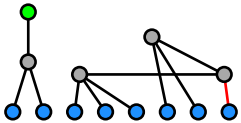
ID: 437 V_{1^n}
n: 4 1 ↤ID 282



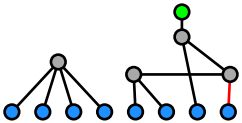
ID: 433 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 280 RED



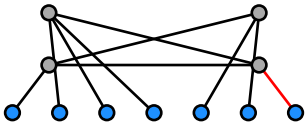
ID: 440 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ID 572



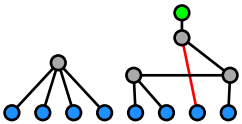
ID: 436 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ID 571 RED



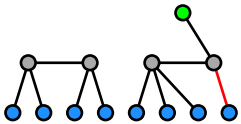
ID: 443 V_{1^n}
n: 4 1 ↦ID 574



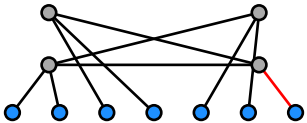
ID: 435 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ID 570 RED



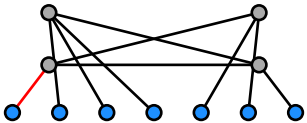
ID: 438 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 283



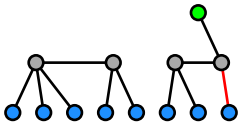
ID: 441 V_{1^n}
n: 4 1 ↤ID 285



ID: 442 V_{1^n}
n: 4 1 ↦ID 573 RED

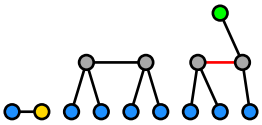


ID: 439 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 284 RED

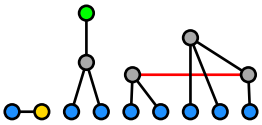


--- B,Birr cases without weight 11 relations graphs: 76 ---

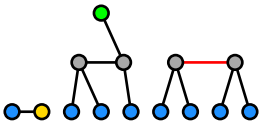
ID: 491 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 311



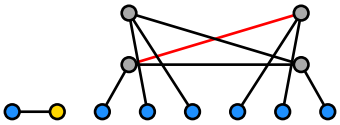
ID: 488 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 307



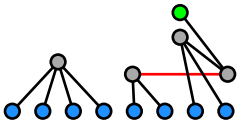
ID: 481 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 302



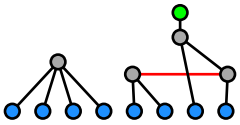
ID: 496 V_{1^n}
n: 4 1 ↤ID 315



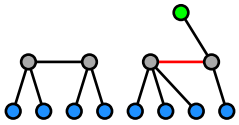
ID: 500 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 603



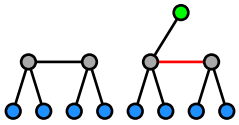
ID: 501 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 604



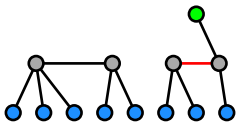
ID: 498 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 319



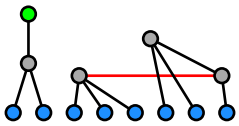
ID: 499 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 320



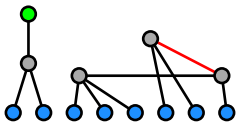
ID: 492 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 312



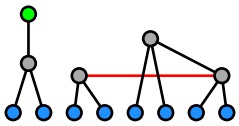
ID: 493 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 314



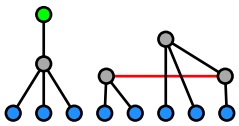
ID: 495 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 602



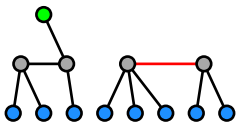
ID: 494 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 313



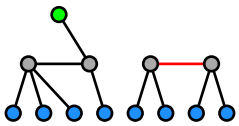
ID: 489 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 601



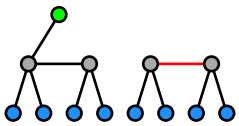
ID: 487 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 308



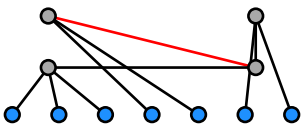
ID: 485 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 600



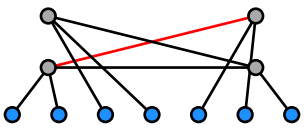
ID: 486 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 306



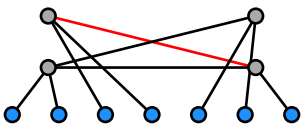
ID: 502 V_{1^n}
n: 4 1 ↦ ID 605



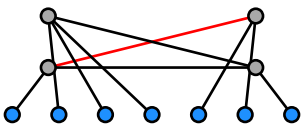
ID: 503 V_{1^n}
n: 4 1 ↤ID 326



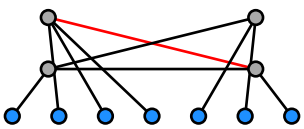
ID: 505 V_{1^n}
n: 4 1 ↤ID 324



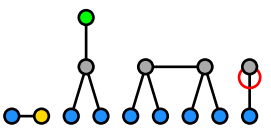
ID: 506 V_{1^n}
n: 4 1 ↤ID 325



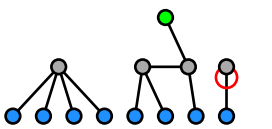
ID: 504 V_{1^n}
n: 4 1 ↤ID 321



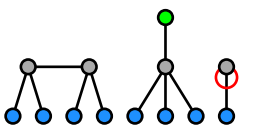
ID: 538 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 357



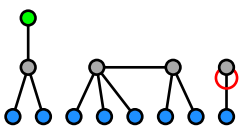
ID: 539 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 359



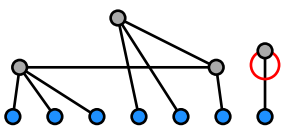
ID: 540 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↦ ID 618



ID: 542 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 361

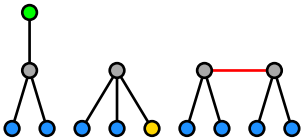


ID: 543 V_{1^n}
n: 4 1 ↤ID 362

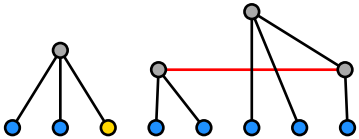


--- B,Birr cases with weight 11 relations relation groups: 6 ---

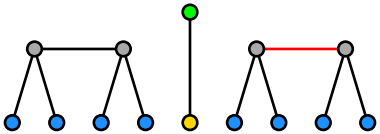
ID: 484 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 301



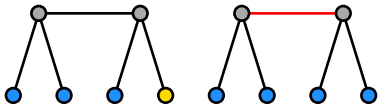
ID: 490 V_{1^n}
n: 4 1 ↤ID 309



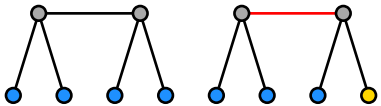
ID: 483 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 305



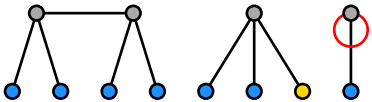
ID: 482 V_{1^n}
n: 4 1 ↤ID 304



ID: 497 V_{1^n}
n: 4 1 ↤ID 318 RED

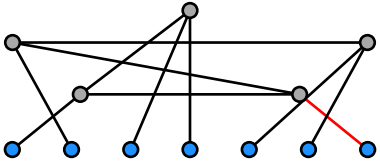


ID: 541 V_{1^n}
n: 4 1 ↤ID 360

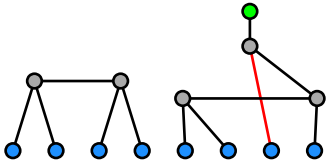


--------- edges: 14-n graphs: 73 ---------
--- A2 case with weight 13 relations relation groups: 6 ---

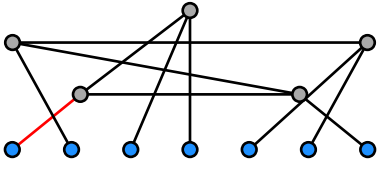
ID: 574 V_{1^n}
n: 4 1 ↤ID 443



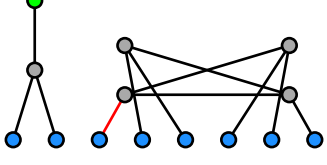
ID: 570 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 435 RED



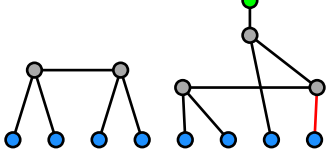
ID: 573 V_{1^n}
n: 4 1 ↤ID 442 RED



ID: 572 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 440

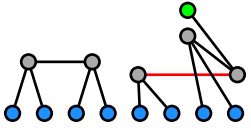


ID: 571 $V_{1^{n-1}} \boxtimes V_1$
n: 4 1 ↤ID 436 RED

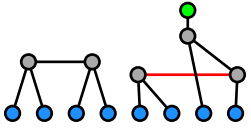


--- B,Birr cases without weight 11 relations graphs: 43 ---

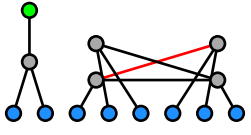
ID: 603 $V_1{}^{n-1} \boxtimes V_1$
n: 4 1 ↤ID 500



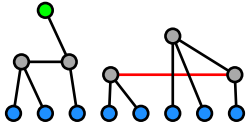
ID: 604 $V_1{}^{n-1} \boxtimes V_1$
n: 4 1 ↤ID 501



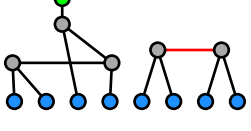
ID: 602 $V_1{}^{n-1} \boxtimes V_1$
n: 4 1 ↤ID 495



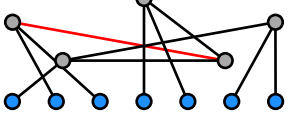
ID: 601 $V_1{}^{n-1} \boxtimes V_1$
n: 4 1 ↤ID 489



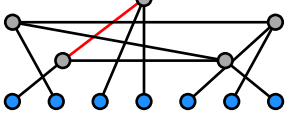
ID: 600 $V_1{}^{n-1} \boxtimes V_1$
n: 4 1 ↤ID 485



ID: 605 $V_1{}^{n}$
n: 4 1 ↤ID 502



ID: 606 $V_1{}^{n}$
n: 4 1



ID: 618 $V_1{}^{n-1} \boxtimes V_1$
n: 4 1 ↤ID 540