---- 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 ---

1.0

0.5

-0.5

-1.0

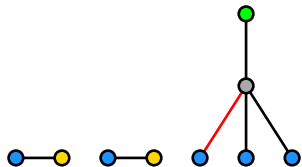-1.0   -0.5   0.5   1.0
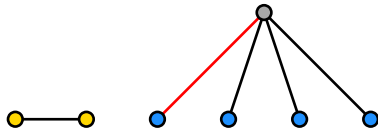
--------- edges: 11-n   graphs: 64   ---------
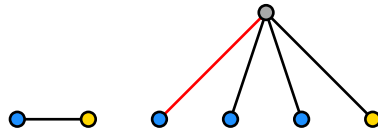--- A3 case   graphs: 45 ---

ID: 139 $V_{1^{n-1}} \boxtimes V_1$
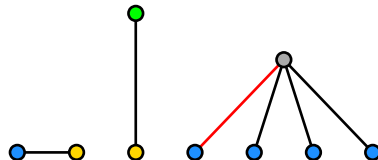n: 7 4 1 $\mapsto$ ID 291

ID: 140 V_{1^n}
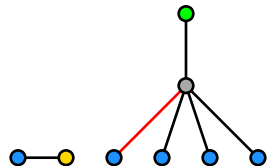n: 7 4 1 $\mapsto$ ID 219

ID: 141 V_{1^n}
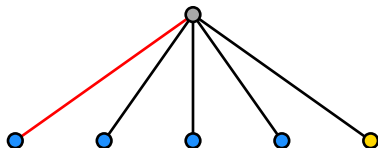n: 7 4 1 $\mapsto$ ID 292

ID: 142 $V_{1^{n-1}} \boxtimes V_1$
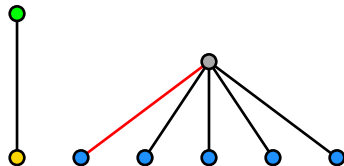n: 7 4 1 $\mapsto$ ID 215

ID: 143 $V_{1^{n-1}} \boxtimes V_1$
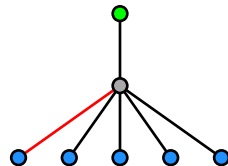n: 7 4 1 $\mapsto$ ID 224

ID: 144 V_{1^n}
n: 7 4 1 $\mapsto$ ID 220

ID: 145 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1 $\mapsto$ ID 221

ID: 146 $V_{1^{n-1}} \boxtimes V_1$
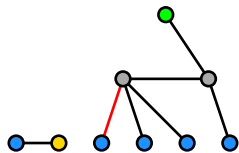n: 7 4 1 $\mapsto$ ID 225

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

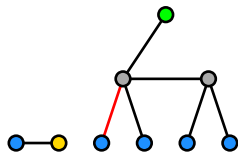ID: 197 V_{1^n}
n: 7 4 1 $\mapsto$ ID 351
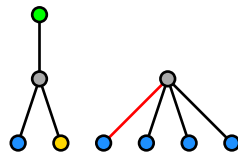
ID: 215 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   ←ID 142
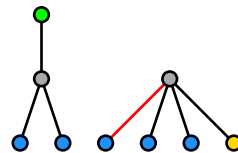
ID: 216 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   ↦ ID 465
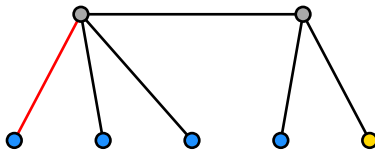
ID: 217 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   ↦ ID 384

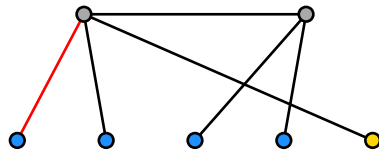ID: 218 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   ↦ ID 422

ID: 219 V_{1^n}
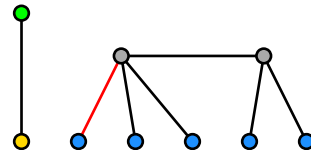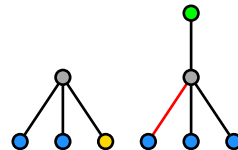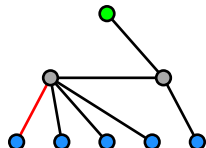n: 7 4 1   ←ID 140

ID: 220 V_{1^n}
n: 7 4 1   ←ID 144
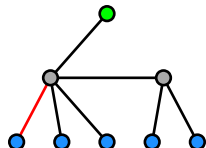
ID: 221 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   ←ID 145
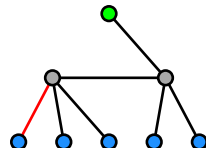
ID: 222 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   ↦ ID 429

ID: 223 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   ↦ ID 386
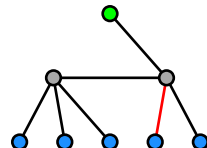
ID: 224 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   ←ID 143

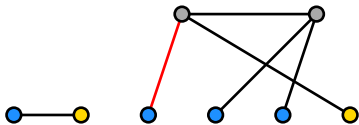ID: 225 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   ←ID 146

ID: 226 $V_{1^{n-1}} \boxtimes V_1$
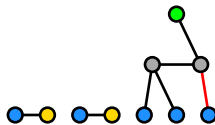n: 7 4 1   ↦ ID 385

--- A2 case with weight 13 relations   relation groups: 4 ---
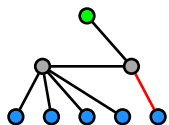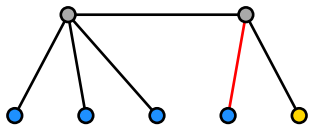
ID: 274 V_{1^n}
n: 7 4 1 $\mapsto$ ID 425
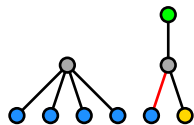
ID: 273 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   Redundant

ID: 278 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1 $\mapsto$ ID 430
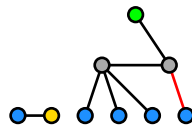
ID: 277 V_{1^n}
n: 7 4 1 $\mapsto$ ID 424

ID: 276 $V_{1^{n-1}} \boxtimes V_1$
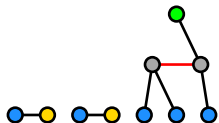n: 7 4 1 $\mapsto$ ID 421

ID: 275 $V_{1^{n-1}} \boxtimes V_1$
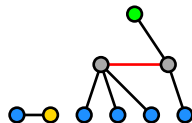n: 7 4 1   Redundant

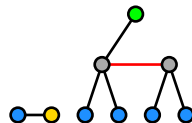--- B,Birr cases without weight 11 relations   graphs: 60 ---

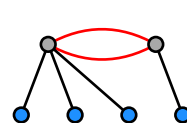ID: 291 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1 $\leftarrow$ ID 139

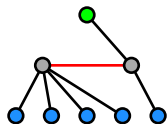ID: 293 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1 $\mapsto$ ID 469

ID: 294 $V_{1^{n-1}} \boxtimes V_1$
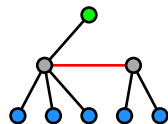n: 7 4 1 $\mapsto$ ID 471

ID: 295 V_{1^n}
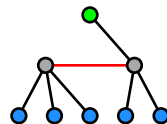n: 7 4 1 $\mapsto$ ID 423

ID: 298 $V_{1^{n-1}} \boxtimes V_1$
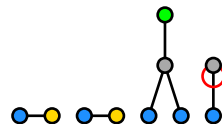n: 7 4 1 $\mapsto$ ID 472

ID: 299 $V_{1^{n-1}} \boxtimes V_1$
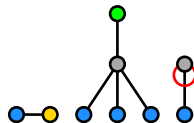n: 7 4 1 $\mapsto$ ID 474

ID: 300 $V_{1^{n-1}} \boxtimes V_1$
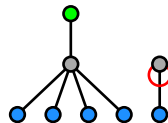n: 7 4 1 $\mapsto$ ID 473

ID: 349 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1 $\mapsto$ ID 535

ID: 350 $V_{1^{n-1}} \boxtimes V_1$
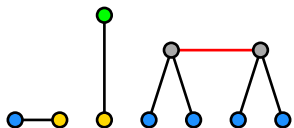n: 7 4 1 $\mapsto$ ID 530

ID: 355 $V_{1^{n-1}} \boxtimes V_1$
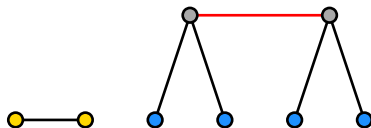n: 7 4 1 $\mapsto$ ID 536

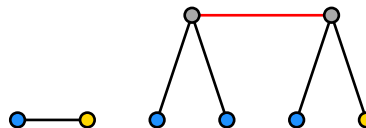--- B,Birr cases with weight 11 relations   relation groups: 5 ---

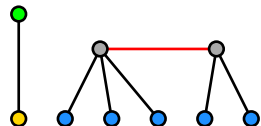ID: 289 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1 $\mapsto$ ID 466

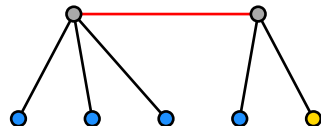ID: 288 V_{1^n}
n: 7 4 1   Redundant

ID: 292 V_{1^n}
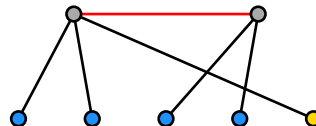n: 7 4 1 $\hookleftarrow$ ID 141

ID: 290 $V_{1^{n-1}} \boxtimes V_1$
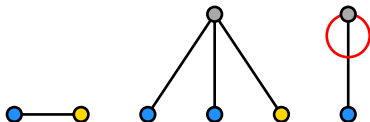n: 7 4 1 $\mapsto$ ID 462

ID: 296 V_{1^n}
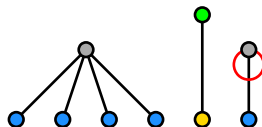n: 7 4 1 $\mapsto$ ID 467

ID: 297 V_{1^n}
n: 7 4 1   Redundant
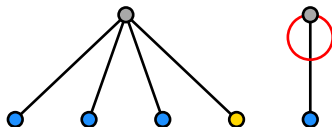
ID: 351 V_{1^n}
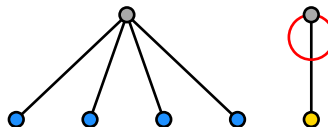n: 7 4 1 $\hookleftarrow$ ID 197

ID: 354 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1 $\mapsto$ ID 533
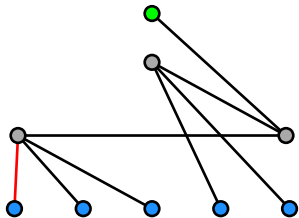
ID: 352 V_{1^n}
n: 7 4 1 $\mapsto$ ID 531

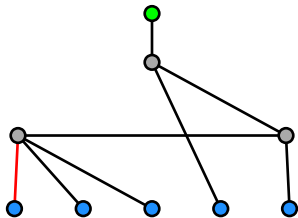ID: 353 V_{1^n}
n: 7 4 1   Redundant

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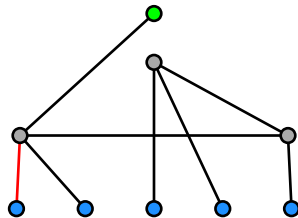--- A3 case   graphs: 34 ---

ID: 383 $V_1{}^{n-1} \boxtimes V_1$
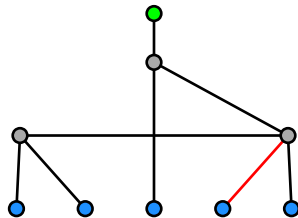n: 7 4 1 $\mapsto$ ID 565

ID: 384 $V_1{}^{n-1} \boxtimes V_1$
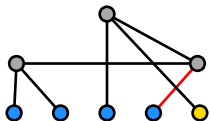n: 7 4 1 $\leftarrow$ ID 217

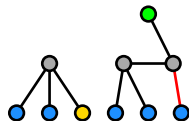ID: 385 $V_1{}^{n-1} \boxtimes V_1$
n: 7 4 1 $\leftarrow$ ID 226

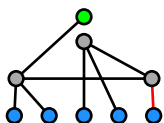ID: 386 $V_1{}^{n-1} \boxtimes V_1$
n: 7 4 1 $\leftarrow$ ID 223

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

ID: 425 V_{1^n}
n: 7 4 1   ↩ID 274

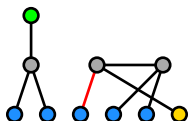ID: 426 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   Redundant
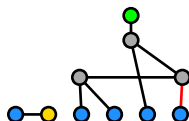

ID: 429 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   ↩ID 222
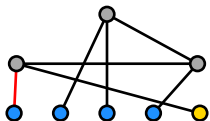

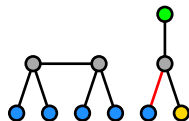ID: 422 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   ↩ID 218

ID: 420 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   Redundant

ID: 424 V_{1^n}
n: 7 4 1   ↩ID 277

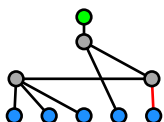ID: 421 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   ↩ID 276
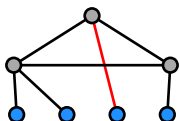

ID: 419 $V_{1^{n-1}} \boxtimes V_1$
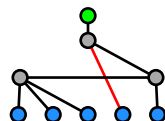n: 7 4 1   Redundant
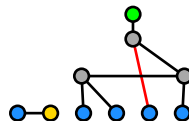
ID: 428 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   ↦ ID 566
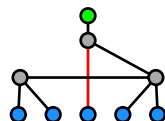

ID: 423 V_{1^n}
n: 7 4 1   ↩ID 295

ID: 427 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   Redundant
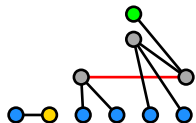

ID: 430 $V_{1^{n-1}} \boxtimes V_1$
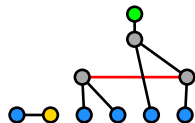n: 7 4 1   ↩ID 278

--- B,Birr cases without weight 11 relations   graphs: 76 ---
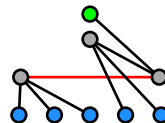
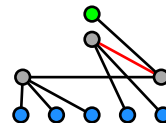ID: 465 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1 $\leftarrowtail$ID 216

ID: 466 $V_{1^{n-1}} \boxtimes V_1$
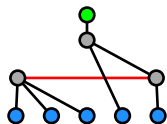n: 7 4 1 $\leftarrowtail$ID 289

ID: 469 $V_{1^{n-1}} \boxtimes V_1$
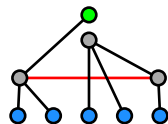n: 7 4 1 $\leftarrowtail$ID 293

ID: 472 $V_{1^{n-1}} \boxtimes V_1$
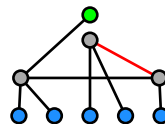n: 7 4 1 $\leftarrowtail$ID 298

ID: 473 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1 $\leftarrowtail$ID 300
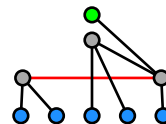
ID: 470 $V_{1^{n-1}} \boxtimes V_1$
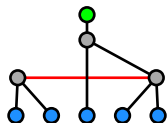n: 7 4 1 $\mapsto$ ID 591

ID: 475 $V_{1^{n-1}} \boxtimes V_1$
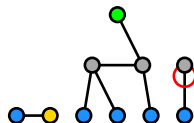n: 7 4 1 $\mapsto$ ID 592

ID: 471 $V_{1^{n-1}} \boxtimes V_1$
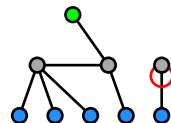n: 7 4 1 $\leftarrowtail$ID 294

ID: 474 $V_{1^{n-1}} \boxtimes V_1$
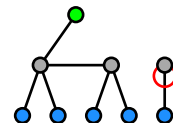n: 7 4 1 $\leftarrowtail$ID 299

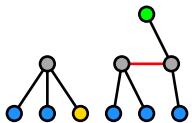ID: 530 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1 $\leftarrowtail$ID 350

ID: 535 $V_{1^{n-1}} \boxtimes V_1$
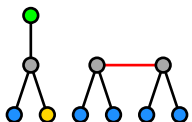n: 7 4 1 $\leftarrowtail$ID 349

ID: 536 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1 $\leftarrowtail$ID 355

--- B,Birr cases with weight 11 relations   relation groups: 6 ---
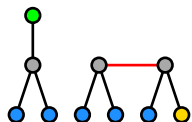
ID: 463 $V_{1^{n-1}} \boxtimes V_1$
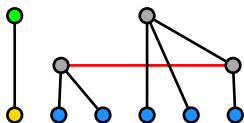n: 7 4 1 $\mapsto$ ID 593

ID: 461 $V_{1^{n-1}} \boxtimes V_1$
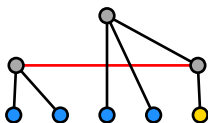n: 7 4 1 $\mapsto$ ID 594
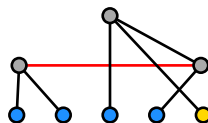
ID: 464 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   Redundant

ID: 462 $V_{1^{n-1}} \boxtimes V_1$
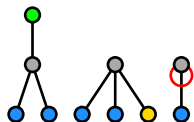n: 7 4 1 $\leftarrow$ID 290

ID: 467 V_{1^n}
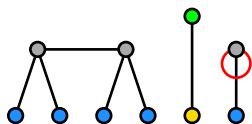n: 7 4 1 $\leftarrow$ID 296

ID: 468 V_{1^n}
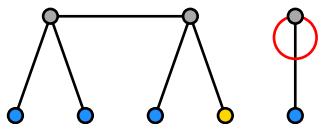n: 7 4 1   Redundant

ID: 534 $V_{1^{n-1}} \boxtimes V_1$
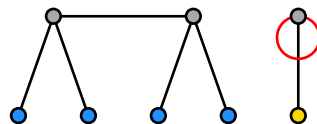n: 7 4 1 $\mapsto$ ID 616

ID: 533 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1 $\leftarrow$ID 354

ID: 531 V_{1^n}
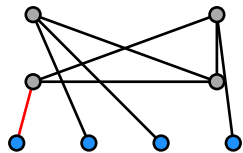n: 7 4 1 $\leftarrow$ID 352

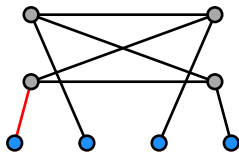ID: 532 V_{1^n}
n: 7 4 1   Redundant

--------- edges: 14-n   graphs: 73   ---------
--- A2 case with weight 13 relations   relation groups: 6 ---
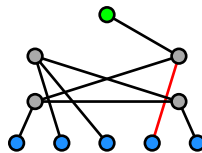
ID: 563 V_{1^n}
n: 7 4 1
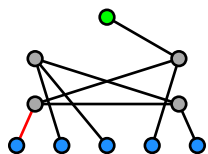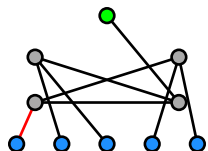
ID: 564 V_{1^n}
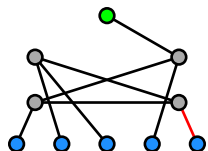n: 7 4 1   Redundant

ID: 567 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   Redundant

ID: 566 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   ←ID 428

ID: 565 $V_{1^{n-1}} \boxtimes V_1$
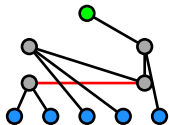n: 7 4 1   ←ID 383

ID: 568 $V_{1^{n-1}} \boxtimes V_1$
n: 7 4 1   Redundant
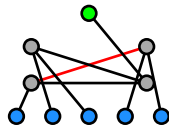
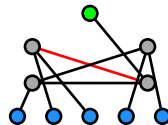--- B,Birr cases without weight 11 relations   graphs: 43 ---

ID: 591 $V_1{}^{n-1} \boxtimes V_1$
n: 7 4 1   ←ID 470
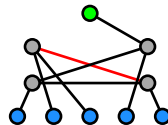
ID: 592 $V_1{}^{n-1} \boxtimes V_1$
n: 7 4 1   ←ID 475

ID: 593 $V_1{}^{n-1} \boxtimes V_1$
n: 7 4 1   ←ID 463

ID: 594 $V_1{}^{n-1} \boxtimes V_1$
n: 7 4 1   ←ID 461

ID: 616 $V_1{}^{n-1} \boxtimes V_1$
n: 7 4 1   ←ID 534