Rank-140 over GF(16)

January 15, 2021

The equation

The equation of the surface is :

$$X_0^3 + X_1^3 + X_2^3 + X_3^3 + X_0^2 X_1 + X_0^2 X_2 + X_0^2 X_3 = 0$$

(1, 1, 1, 1, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)
The point rank of the equation over GF(16) is **2236976**

General information

Number of lines	0
Number of points	273
Number of singular points	0
Number of Eckardt points	0
Number of double points	0
Number of single points	0
Number of points off lines	273
Number of Hesse planes	0
Number of axes	0
Type of points on lines	
Type of lines on points	0^{273}

Singular Points

The surface has 0 singular points:

The 0 Lines

The lines and their Pluecker coordinates are:
Rank of lines: ( )
Rank of points on Klein quadric: ( )

Eckardt Points

The surface has 0 Eckardt points:

Double Points

The surface has 0 Double points:
The double points on the surface are:

Single Points

The surface has 0 single points:
The single points on the surface are:

The single points on the surface are:

Points on surface but on no line

The surface has 273 points not on any line:
The points on the surface but not on lines are:

$0: P_{35} = (0, 1, 1, 0)$

$1: P_{63} = (12, 2, 1, 0)$

$2: P_{74} = (7, 3, 1, 0)$

$3: P_{77} = (10, 3, 1, 0)$

$4: P_{82} = (15, 3, 1, 0)$

$5: P_{89} = (6, 4, 1, 0)$

$6: P_{102} = (3, 5, 1, 0)$

$7: P_{110} = (11, 5, 1, 0)$

$8: P_{111} = (12, 5, 1, 0)$

$9: P_{128} = (13, 6, 1, 0)$

$10: P_{143} = (12, 7, 1, 0)$

$11: P_{152} = (5, 8, 1, 0)$

$12: P_{153} = (6, 8, 1, 0)$

$13: P_{157} = (10, 8, 1, 0)$

$14: P_{176} = (13, 9, 1, 0)$

$15: P_{179} = (0, 10, 1, 0)$

$16: P_{190} = (11, 10, 1, 0)$

$17: P_{195} = (0, 11, 1, 0)$

$18: P_{205} = (10, 11, 1, 0)$

$19: P_{217} = (6, 12, 1, 0)$

$20: P_{234} = (7, 13, 1, 0)$

$21: P_{250} = (7, 14, 1, 0)$

$22: P_{267} = (8, 15, 1, 0)$

$23: P_{270} = (11, 15, 1, 0)$

$24: P_{272} = (13, 15, 1, 0)$

$25: P_{290} = (0, 1, 0, 1)$

$26: P_{318} = (12, 2, 0, 1)$

$27: P_{329} = (7, 3, 0, 1)$

$28: P_{332} = (10, 3, 0, 1)$

$29: P_{337} = (15, 3, 0, 1)$

$30: P_{344} = (6, 4, 0, 1)$

$31: P_{357} = (3, 5, 0, 1)$

$32: P_{365} = (11, 5, 0, 1)$

$33: P_{366} = (12, 5, 0, 1)$

$34: P_{383} = (13, 6, 0, 1)$

$35: P_{398} = (12, 7, 0, 1)$

$36: P_{407} = (5, 8, 0, 1)$

$37: P_{408} = (6, 8, 0, 1)$

$38: P_{412} = (10, 8, 0, 1)$

$39: P_{431} = (13, 9, 0, 1)$

$40: P_{434} = (0, 10, 0, 1)$

$41: P_{445} = (11, 10, 0, 1)$

$42: P_{450} = (0, 11, 0, 1)$

$43: P_{460} = (10, 11, 0, 1)$

$44: P_{472} = (6, 12, 0, 1)$

$45: P_{489} = (7, 13, 0, 1)$

$46: P_{505} = (7, 14, 0, 1)$

$47: P_{522} = (8, 15, 0, 1)$

$48: P_{525} = (11, 15, 0, 1)$

$49: P_{527} = (13, 15, 0, 1)$

$50: P_{530} = (0, 0, 1, 1)$

$51: P_{797} = (12, 0, 2, 1)$

$52: P_{850} = (1, 4, 2, 1)$

$53: P_{907} = (10, 7, 2, 1)$

$54 : P_{928} = (15, 8, 2, 1)$

$55 : P_{935} = (6, 9, 2, 1)$

$56 : P_{936} = (7, 9, 2, 1)$

$57 : P_{940} = (11, 9, 2, 1)$

$58 : P_{946} = (1, 10, 2, 1)$

$59 : P_{965} = (4, 11, 2, 1)$

$60 : P_{989} = (12, 12, 2, 1)$

$61 : P_{1002} = (9, 13, 2, 1)$

$62 : P_{1010} = (1, 14, 2, 1)$

$63 : P_{1028} = (3, 15, 2, 1)$

$64 : P_{1048} = (7, 0, 3, 1)$

$65 : P_{1051} = (10, 0, 3, 1)$

$66 : P_{1056} = (15, 0, 3, 1)$

$67 : P_{1110} = (5, 4, 3, 1)$

$68 : P_{1123} = (2, 5, 3, 1)$

$69 : P_{1124} = (3, 5, 3, 1)$

$70 : P_{1127} = (6, 5, 3, 1)$

$71 : P_{1145} = (8, 6, 3, 1)$

$72 : P_{1160} = (7, 7, 3, 1)$

$73 : P_{1170} = (1, 8, 3, 1)$

$74 : P_{1171} = (2, 8, 3, 1)$

$75 : P_{1178} = (9, 8, 3, 1)$

$76 : P_{1190} = (5, 9, 3, 1)$

$77 : P_{1211} = (10, 10, 3, 1)$

$78 : P_{1225} = (8, 11, 3, 1)$

$79 : P_{1251} = (2, 13, 3, 1)$

$80 : P_{1254} = (5, 13, 3, 1)$

$81 : P_{1257} = (8, 13, 3, 1)$

$82 : P_{1293} = (12, 15, 3, 1)$

$83 : P_{1295} = (14, 15, 3, 1)$

$84 : P_{1296} = (15, 15, 3, 1)$

$85 : P_{1303} = (6, 0, 4, 1)$

$86 : P_{1330} = (1, 2, 4, 1)$

$87 : P_{1350} = (5, 3, 4, 1)$

$88 : P_{1399} = (6, 6, 4, 1)$

$89 : P_{1423} = (14, 7, 4, 1)$

$90 : P_{1442} = (1, 9, 4, 1)$

$91 : P_{1466} = (9, 10, 4, 1)$

$92 : P_{1474} = (1, 11, 4, 1)$

$93 : P_{1500} = (11, 12, 4, 1)$

$94 : P_{1531} = (10, 14, 4, 1)$

$95 : P_{1533} = (12, 14, 4, 1)$

$96 : P_{1534} = (13, 14, 4, 1)$

$97 : P_{1540} = (3, 15, 4, 1)$

$98 : P_{1556} = (3, 0, 5, 1)$

$99 : P_{1564} = (11, 0, 5, 1)$

$100 : P_{1565} = (12, 0, 5, 1)$

$101 : P_{1603} = (2, 3, 5, 1)$

$102 : P_{1604} = (3, 3, 5, 1)$

$103 : P_{1607} = (6, 3, 5, 1)$

$104 : P_{1669} = (4, 7, 5, 1)$

$105 : P_{1673} = (8, 7, 5, 1)$

$106 : P_{1680} = (15, 7, 5, 1)$

$107 : P_{1685} = (4, 8, 5, 1)$

$108 : P_{1686} = (5, 8, 5, 1)$

$109 : P_{1694} = (13, 8, 5, 1)$

$110 : P_{1705} = (8, 9, 5, 1)$

$111 : P_{1728} = (15, 10, 5, 1)$

$112 : P_{1740} = (11, 11, 5, 1)$

$113 : P_{1757} = (12, 12, 5, 1)$

$114 : P_{1776} = (15, 13, 5, 1)$

$115 : P_{1785} = (8, 14, 5, 1)$

$116 : P_{1794} = (1, 15, 5, 1)$

$117 : P_{1797} = (4, 15, 5, 1)$

$118 : P_{1807} = (14, 15, 5, 1)$

$119 : P_{1822} = (13, 0, 6, 1)$

$120 : P_{1865} = (8, 3, 6, 1)$

$121 : P_{1879} = (6, 4, 6, 1)$

$122 : P_{1943} = (6, 8, 6, 1)$

$123 : P_{1963} = (10, 9, 6, 1)$

$124 : P_{1976} = (7, 10, 6, 1)$

$125 : P_{2000} = (15, 11, 6, 1)$

$126 : P_{2007} = (6, 12, 6, 1)$

$127 : P_{2030} = (13, 13, 6, 1)$

$128 : P_{2037} = (4, 14, 6, 1)$

$129 : P_{2052} = (3, 15, 6, 1)$

$130 : P_{2054} = (5, 15, 6, 1)$

$131 : P_{2063} = (14, 15, 6, 1)$

$132 : P_{2077} = (12, 0, 7, 1)$

$133 : P_{2107} = (10, 2, 7, 1)$

$134 : P_{2120} = (7, 3, 7, 1)$

$135 : P_{2143} = (14, 4, 7, 1)$

$136 : P_{2149} = (4, 5, 7, 1)$

$137 : P_{2153} = (8, 5, 7, 1)$

$138 : P_{2160} = (15, 5, 7, 1)$

$139 : P_{2196} = (3, 8, 7, 1)$

$140 : P_{2231} = (6, 10, 7, 1)$

$141 : P_{2246} = (5, 11, 7, 1)$

$142 : P_{2269} = (12, 12, 7, 1)$

$143 : P_{2280} = (7, 13, 7, 1)$

$144 : P_{2296} = (7, 14, 7, 1)$

$145 : P_{2326} = (5, 0, 8, 1)$

$146 : P_{2327} = (6, 0, 8, 1)$

$147 : P_{2331} = (10, 0, 8, 1)$

$148 : P_{2368} = (15, 2, 8, 1)$

$149 : P_{2370} = (1, 3, 8, 1)$

$150 : P_{2371} = (2, 3, 8, 1)$

$151 : P_{2378} = (9, 3, 8, 1)$

$152 : P_{2405} = (4, 5, 8, 1)$

$153 : P_{2406} = (5, 5, 8, 1)$

$154 : P_{2414} = (13, 5, 8, 1)$

$155 : P_{2423} = (6, 6, 8, 1)$

$156 : P_{2436} = (3, 7, 8, 1)$

$157 : P_{2491} = (10, 10, 8, 1)$

$158 : P_{2500} = (3, 11, 8, 1)$

$159 : P_{2516} = (3, 12, 8, 1)$

$160 : P_{2522} = (9, 12, 8, 1)$

$161 : P_{2528} = (15, 12, 8, 1)$

$162: P_{2560} = (15, 14, 8, 1)$
$163: P_{2568} = (7, 15, 8, 1)$
$164: P_{2569} = (8, 15, 8, 1)$
$165: P_{2570} = (9, 15, 8, 1)$
$166: P_{2590} = (13, 0, 9, 1)$
$167: P_{2615} = (6, 2, 9, 1)$
$168: P_{2616} = (7, 2, 9, 1)$
$169: P_{2620} = (11, 2, 9, 1)$
$170: P_{2630} = (5, 3, 9, 1)$
$171: P_{2642} = (1, 4, 9, 1)$
$172: P_{2665} = (8, 5, 9, 1)$
$173: P_{2683} = (10, 6, 9, 1)$
$174: P_{2738} = (1, 10, 9, 1)$
$175: P_{2767} = (14, 11, 9, 1)$
$176: P_{2771} = (2, 12, 9, 1)$
$177: P_{2798} = (13, 13, 9, 1)$
$178: P_{2802} = (1, 14, 9, 1)$
$179: P_{2833} = (0, 0, 10, 1)$
$180: P_{2844} = (11, 0, 10, 1)$
$181: P_{2866} = (1, 2, 10, 1)$
$182: P_{2891} = (10, 3, 10, 1)$
$183: P_{2906} = (9, 4, 10, 1)$
$184: P_{2928} = (15, 5, 10, 1)$
$185: P_{2936} = (7, 6, 10, 1)$
$186: P_{2951} = (6, 7, 10, 1)$
$187: P_{2971} = (10, 8, 10, 1)$
$188: P_{2978} = (1, 9, 10, 1)$
$189: P_{3010} = (1, 11, 10, 1)$
$190: P_{3019} = (10, 11, 10, 1)$
$191: P_{3020} = (11, 11, 10, 1)$
$192: P_{3033} = (8, 12, 10, 1)$
$193: P_{3044} = (3, 13, 10, 1)$
$194: P_{3059} = (2, 14, 10, 1)$
$195: P_{3078} = (5, 15, 10, 1)$
$196: P_{3089} = (0, 0, 11, 1)$
$197: P_{3099} = (10, 0, 11, 1)$
$198: P_{3125} = (4, 2, 11, 1)$
$199: P_{3145} = (8, 3, 11, 1)$
$200: P_{3154} = (1, 4, 11, 1)$
$201: P_{3180} = (11, 5, 11, 1)$
$202: P_{3200} = (15, 6, 11, 1)$
$203: P_{3206} = (5, 7, 11, 1)$
$204: P_{3220} = (3, 8, 11, 1)$
$205: P_{3247} = (14, 9, 11, 1)$
$206: P_{3250} = (1, 10, 11, 1)$
$207: P_{3259} = (10, 10, 11, 1)$
$208: P_{3260} = (11, 10, 11, 1)$
$209: P_{3294} = (13, 12, 11, 1)$
$210: P_{3309} = (12, 13, 11, 1)$
$211: P_{3314} = (1, 14, 11, 1)$
$212: P_{3340} = (11, 15, 11, 1)$
$213: P_{3351} = (6, 0, 12, 1)$
$214: P_{3389} = (12, 2, 12, 1)$
$215: P_{3420} = (11, 4, 12, 1)$

$216: P_{3437} = (12, 5, 12, 1)$
$217: P_{3447} = (6, 6, 12, 1)$
$218: P_{3469} = (12, 7, 12, 1)$
$219: P_{3476} = (3, 8, 12, 1)$
$220: P_{3482} = (9, 8, 12, 1)$
$221: P_{3488} = (15, 8, 12, 1)$
$222: P_{3491} = (2, 9, 12, 1)$
$223: P_{3513} = (8, 10, 12, 1)$
$224: P_{3534} = (13, 11, 12, 1)$
$225: P_{3590} = (5, 15, 12, 1)$
$226: P_{3608} = (7, 0, 13, 1)$
$227: P_{3642} = (9, 2, 13, 1)$
$228: P_{3651} = (2, 3, 13, 1)$
$229: P_{3654} = (5, 3, 13, 1)$
$230: P_{3657} = (8, 3, 13, 1)$
$231: P_{3696} = (15, 5, 13, 1)$
$232: P_{3710} = (13, 6, 13, 1)$
$233: P_{3720} = (7, 7, 13, 1)$
$234: P_{3758} = (13, 9, 13, 1)$
$235: P_{3764} = (3, 10, 13, 1)$
$236: P_{3789} = (12, 11, 13, 1)$
$237: P_{3836} = (11, 14, 13, 1)$
$238: P_{3854} = (13, 15, 13, 1)$
$239: P_{3864} = (7, 0, 14, 1)$
$240: P_{3890} = (1, 2, 14, 1)$
$241: P_{3931} = (10, 4, 14, 1)$
$242: P_{3933} = (12, 4, 14, 1)$
$243: P_{3934} = (13, 4, 14, 1)$
$244: P_{3945} = (8, 5, 14, 1)$
$245: P_{3957} = (4, 6, 14, 1)$
$246: P_{3976} = (7, 7, 14, 1)$
$247: P_{4000} = (15, 8, 14, 1)$
$248: P_{4002} = (1, 9, 14, 1)$
$249: P_{4019} = (2, 10, 14, 1)$
$250: P_{4034} = (1, 11, 14, 1)$
$251: P_{4076} = (11, 13, 14, 1)$
$252: P_{4121} = (8, 0, 15, 1)$
$253: P_{4124} = (11, 0, 15, 1)$
$254: P_{4126} = (13, 0, 15, 1)$
$255: P_{4148} = (3, 2, 15, 1)$
$256: P_{4173} = (12, 3, 15, 1)$
$257: P_{4175} = (14, 3, 15, 1)$
$258: P_{4176} = (15, 3, 15, 1)$
$259: P_{4180} = (3, 4, 15, 1)$
$260: P_{4194} = (1, 5, 15, 1)$
$261: P_{4197} = (4, 5, 15, 1)$
$262: P_{4207} = (14, 5, 15, 1)$
$263: P_{4212} = (3, 6, 15, 1)$
$264: P_{4214} = (5, 6, 15, 1)$
$265: P_{4223} = (14, 6, 15, 1)$
$266: P_{4248} = (7, 8, 15, 1)$
$267: P_{4249} = (8, 8, 15, 1)$
$268: P_{4250} = (9, 8, 15, 1)$
$269: P_{4278} = (5, 10, 15, 1)$

$270 : P_{4300} = (11, 11, 15, 1)$ $272 : P_{4334} = (13, 13, 15, 1)$
$271 : P_{4310} = (5, 12, 15, 1)$

Line Intersection Graph

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Neighbor sets in the line intersection graph:
The surface has 273 points:
The points on the surface are:

$0 : P_{35} = (0, 1, 1, 0)$
$1 : P_{63} = (12, 2, 1, 0)$
$2 : P_{74} = (7, 3, 1, 0)$
$3 : P_{77} = (10, 3, 1, 0)$
$4 : P_{82} = (15, 3, 1, 0)$
$5 : P_{89} = (6, 4, 1, 0)$
$6 : P_{102} = (3, 5, 1, 0)$
$7 : P_{110} = (11, 5, 1, 0)$
$8 : P_{111} = (12, 5, 1, 0)$
$9 : P_{128} = (13, 6, 1, 0)$
$10 : P_{143} = (12, 7, 1, 0)$
$11 : P_{152} = (5, 8, 1, 0)$
$12 : P_{153} = (6, 8, 1, 0)$
$13 : P_{157} = (10, 8, 1, 0)$
$14 : P_{176} = (13, 9, 1, 0)$
$15 : P_{179} = (0, 10, 1, 0)$
$16 : P_{190} = (11, 10, 1, 0)$
$17 : P_{195} = (0, 11, 1, 0)$
$18 : P_{205} = (10, 11, 1, 0)$
$19 : P_{217} = (6, 12, 1, 0)$
$20 : P_{234} = (7, 13, 1, 0)$
$21 : P_{250} = (7, 14, 1, 0)$
$22 : P_{267} = (8, 15, 1, 0)$
$23 : P_{270} = (11, 15, 1, 0)$
$24 : P_{272} = (13, 15, 1, 0)$
$25 : P_{290} = (0, 1, 0, 1)$
$26 : P_{318} = (12, 2, 0, 1)$
$27 : P_{329} = (7, 3, 0, 1)$
$28 : P_{332} = (10, 3, 0, 1)$
$29 : P_{337} = (15, 3, 0, 1)$
$30 : P_{344} = (6, 4, 0, 1)$
$31 : P_{357} = (3, 5, 0, 1)$
$32 : P_{365} = (11, 5, 0, 1)$
$33 : P_{366} = (12, 5, 0, 1)$
$34 : P_{383} = (13, 6, 0, 1)$
$35 : P_{398} = (12, 7, 0, 1)$
$36 : P_{407} = (5, 8, 0, 1)$
$37 : P_{408} = (6, 8, 0, 1)$
$38 : P_{412} = (10, 8, 0, 1)$
$39 : P_{431} = (13, 9, 0, 1)$
$40 : P_{434} = (0, 10, 0, 1)$
$41 : P_{445} = (11, 10, 0, 1)$

$42 : P_{450} = (0, 11, 0, 1)$
$43 : P_{460} = (10, 11, 0, 1)$
$44 : P_{472} = (6, 12, 0, 1)$
$45 : P_{489} = (7, 13, 0, 1)$
$46 : P_{505} = (7, 14, 0, 1)$
$47 : P_{522} = (8, 15, 0, 1)$
$48 : P_{525} = (11, 15, 0, 1)$
$49 : P_{527} = (13, 15, 0, 1)$
$50 : P_{530} = (0, 0, 1, 1)$
$51 : P_{797} = (12, 0, 2, 1)$
$52 : P_{850} = (1, 4, 2, 1)$
$53 : P_{907} = (10, 7, 2, 1)$
$54 : P_{928} = (15, 8, 2, 1)$
$55 : P_{935} = (6, 9, 2, 1)$
$56 : P_{936} = (7, 9, 2, 1)$
$57 : P_{940} = (11, 9, 2, 1)$
$58 : P_{946} = (1, 10, 2, 1)$
$59 : P_{965} = (4, 11, 2, 1)$
$60 : P_{989} = (12, 12, 2, 1)$
$61 : P_{1002} = (9, 13, 2, 1)$
$62 : P_{1010} = (1, 14, 2, 1)$
$63 : P_{1028} = (3, 15, 2, 1)$
$64 : P_{1048} = (7, 0, 3, 1)$
$65 : P_{1051} = (10, 0, 3, 1)$
$66 : P_{1056} = (15, 0, 3, 1)$
$67 : P_{1110} = (5, 4, 3, 1)$
$68 : P_{1123} = (2, 5, 3, 1)$
$69 : P_{1124} = (3, 5, 3, 1)$
$70 : P_{1127} = (6, 5, 3, 1)$
$71 : P_{1145} = (8, 6, 3, 1)$
$72 : P_{1160} = (7, 7, 3, 1)$
$73 : P_{1170} = (1, 8, 3, 1)$
$74 : P_{1171} = (2, 8, 3, 1)$
$75 : P_{1178} = (9, 8, 3, 1)$
$76 : P_{1190} = (5, 9, 3, 1)$
$77 : P_{1211} = (10, 10, 3, 1)$
$78 : P_{1225} = (8, 11, 3, 1)$
$79 : P_{1251} = (2, 13, 3, 1)$
$80 : P_{1254} = (5, 13, 3, 1)$
$81 : P_{1257} = (8, 13, 3, 1)$
$82 : P_{1293} = (12, 15, 3, 1)$
$83 : P_{1295} = (14, 15, 3, 1)$

$84 : P_{1296} = (15, 15, 3, 1)$
$85 : P_{1303} = (6, 0, 4, 1)$
$86 : P_{1330} = (1, 2, 4, 1)$
$87 : P_{1350} = (5, 3, 4, 1)$
$88 : P_{1399} = (6, 6, 4, 1)$
$89 : P_{1423} = (14, 7, 4, 1)$
$90 : P_{1442} = (1, 9, 4, 1)$
$91 : P_{1466} = (9, 10, 4, 1)$
$92 : P_{1474} = (1, 11, 4, 1)$
$93 : P_{1500} = (11, 12, 4, 1)$
$94 : P_{1531} = (10, 14, 4, 1)$
$95 : P_{1533} = (12, 14, 4, 1)$
$96 : P_{1534} = (13, 14, 4, 1)$
$97 : P_{1540} = (3, 15, 4, 1)$
$98 : P_{1556} = (3, 0, 5, 1)$
$99 : P_{1564} = (11, 0, 5, 1)$
$100 : P_{1565} = (12, 0, 5, 1)$
$101 : P_{1603} = (2, 3, 5, 1)$
$102 : P_{1604} = (3, 3, 5, 1)$
$103 : P_{1607} = (6, 3, 5, 1)$
$104 : P_{1669} = (4, 7, 5, 1)$
$105 : P_{1673} = (8, 7, 5, 1)$
$106 : P_{1680} = (15, 7, 5, 1)$
$107 : P_{1685} = (4, 8, 5, 1)$
$108 : P_{1686} = (5, 8, 5, 1)$
$109 : P_{1694} = (13, 8, 5, 1)$
$110 : P_{1705} = (8, 9, 5, 1)$
$111 : P_{1728} = (15, 10, 5, 1)$
$112 : P_{1740} = (11, 11, 5, 1)$
$113 : P_{1757} = (12, 12, 5, 1)$
$114 : P_{1776} = (15, 13, 5, 1)$
$115 : P_{1785} = (8, 14, 5, 1)$
$116 : P_{1794} = (1, 15, 5, 1)$
$117 : P_{1797} = (4, 15, 5, 1)$
$118 : P_{1807} = (14, 15, 5, 1)$
$119 : P_{1822} = (13, 0, 6, 1)$
$120 : P_{1865} = (8, 3, 6, 1)$
$121 : P_{1879} = (6, 4, 6, 1)$
$122 : P_{1943} = (6, 8, 6, 1)$
$123 : P_{1963} = (10, 9, 6, 1)$
$124 : P_{1976} = (7, 10, 6, 1)$
$125 : P_{2000} = (15, 11, 6, 1)$

$126: P_{2007} = (6, 12, 6, 1)$
$127: P_{2030} = (13, 13, 6, 1)$
$128: P_{2037} = (4, 14, 6, 1)$
$129: P_{2052} = (3, 15, 6, 1)$
$130: P_{2054} = (5, 15, 6, 1)$
$131: P_{2063} = (14, 15, 6, 1)$
$132: P_{2077} = (12, 0, 7, 1)$
$133: P_{2107} = (10, 2, 7, 1)$
$134: P_{2120} = (7, 3, 7, 1)$
$135: P_{2143} = (14, 4, 7, 1)$
$136: P_{2149} = (4, 5, 7, 1)$
$137: P_{2153} = (8, 5, 7, 1)$
$138: P_{2160} = (15, 5, 7, 1)$
$139: P_{2196} = (3, 8, 7, 1)$
$140: P_{2231} = (6, 10, 7, 1)$
$141: P_{2246} = (5, 11, 7, 1)$
$142: P_{2269} = (12, 12, 7, 1)$
$143: P_{2280} = (7, 13, 7, 1)$
$144: P_{2296} = (7, 14, 7, 1)$
$145: P_{2326} = (5, 0, 8, 1)$
$146: P_{2327} = (6, 0, 8, 1)$
$147: P_{2331} = (10, 0, 8, 1)$
$148: P_{2368} = (15, 2, 8, 1)$
$149: P_{2370} = (1, 3, 8, 1)$
$150: P_{2371} = (2, 3, 8, 1)$
$151: P_{2378} = (9, 3, 8, 1)$
$152: P_{2405} = (4, 5, 8, 1)$
$153: P_{2406} = (5, 5, 8, 1)$
$154: P_{2414} = (13, 5, 8, 1)$
$155: P_{2423} = (6, 6, 8, 1)$
$156: P_{2436} = (3, 7, 8, 1)$
$157: P_{2491} = (10, 10, 8, 1)$
$158: P_{2500} = (3, 11, 8, 1)$
$159: P_{2516} = (3, 12, 8, 1)$
$160: P_{2522} = (9, 12, 8, 1)$
$161: P_{2528} = (15, 12, 8, 1)$
$162: P_{2560} = (15, 14, 8, 1)$
$163: P_{2568} = (7, 15, 8, 1)$
$164: P_{2569} = (8, 15, 8, 1)$
$165: P_{2570} = (9, 15, 8, 1)$
$166: P_{2590} = (13, 0, 9, 1)$
$167: P_{2615} = (6, 2, 9, 1)$
$168: P_{2616} = (7, 2, 9, 1)$
$169: P_{2620} = (11, 2, 9, 1)$
$170: P_{2630} = (5, 3, 9, 1)$
$171: P_{2642} = (1, 4, 9, 1)$
$172: P_{2665} = (8, 5, 9, 1)$
$173: P_{2683} = (10, 6, 9, 1)$
$174: P_{2738} = (1, 10, 9, 1)$
$175: P_{2767} = (14, 11, 9, 1)$

$176: P_{2771} = (2, 12, 9, 1)$
$177: P_{2798} = (13, 13, 9, 1)$
$178: P_{2802} = (1, 14, 9, 1)$
$179: P_{2833} = (0, 0, 10, 1)$
$180: P_{2844} = (11, 0, 10, 1)$
$181: P_{2866} = (1, 2, 10, 1)$
$182: P_{2891} = (10, 3, 10, 1)$
$183: P_{2906} = (9, 4, 10, 1)$
$184: P_{2928} = (15, 5, 10, 1)$
$185: P_{2936} = (7, 6, 10, 1)$
$186: P_{2951} = (6, 7, 10, 1)$
$187: P_{2971} = (10, 8, 10, 1)$
$188: P_{2978} = (1, 9, 10, 1)$
$189: P_{3010} = (1, 11, 10, 1)$
$190: P_{3019} = (10, 11, 10, 1)$
$191: P_{3020} = (11, 11, 10, 1)$
$192: P_{3033} = (8, 12, 10, 1)$
$193: P_{3044} = (3, 13, 10, 1)$
$194: P_{3059} = (2, 14, 10, 1)$
$195: P_{3078} = (5, 15, 10, 1)$
$196: P_{3089} = (0, 0, 11, 1)$
$197: P_{3099} = (10, 0, 11, 1)$
$198: P_{3125} = (4, 2, 11, 1)$
$199: P_{3145} = (8, 3, 11, 1)$
$200: P_{3154} = (1, 4, 11, 1)$
$201: P_{3180} = (11, 5, 11, 1)$
$202: P_{3200} = (15, 6, 11, 1)$
$203: P_{3206} = (5, 7, 11, 1)$
$204: P_{3220} = (3, 8, 11, 1)$
$205: P_{3247} = (14, 9, 11, 1)$
$206: P_{3250} = (1, 10, 11, 1)$
$207: P_{3259} = (10, 10, 11, 1)$
$208: P_{3260} = (11, 10, 11, 1)$
$209: P_{3294} = (13, 12, 11, 1)$
$210: P_{3309} = (12, 13, 11, 1)$
$211: P_{3314} = (1, 14, 11, 1)$
$212: P_{3340} = (11, 15, 11, 1)$
$213: P_{3351} = (6, 0, 12, 1)$
$214: P_{3389} = (12, 2, 12, 1)$
$215: P_{3420} = (11, 4, 12, 1)$
$216: P_{3437} = (12, 5, 12, 1)$
$217: P_{3447} = (6, 6, 12, 1)$
$218: P_{3469} = (12, 7, 12, 1)$
$219: P_{3476} = (3, 8, 12, 1)$
$220: P_{3482} = (9, 8, 12, 1)$
$221: P_{3488} = (15, 8, 12, 1)$
$222: P_{3491} = (2, 9, 12, 1)$
$223: P_{3513} = (8, 10, 12, 1)$
$224: P_{3534} = (13, 11, 12, 1)$
$225: P_{3590} = (5, 15, 12, 1)$

$226: P_{3608} = (7, 0, 13, 1)$
$227: P_{3642} = (9, 2, 13, 1)$
$228: P_{3651} = (2, 3, 13, 1)$
$229: P_{3654} = (5, 3, 13, 1)$
$230: P_{3657} = (8, 3, 13, 1)$
$231: P_{3696} = (15, 5, 13, 1)$
$232: P_{3710} = (13, 6, 13, 1)$
$233: P_{3720} = (7, 7, 13, 1)$
$234: P_{3758} = (13, 9, 13, 1)$
$235: P_{3764} = (3, 10, 13, 1)$
$236: P_{3789} = (12, 11, 13, 1)$
$237: P_{3836} = (11, 14, 13, 1)$
$238: P_{3854} = (13, 15, 13, 1)$
$239: P_{3864} = (7, 0, 14, 1)$
$240: P_{3890} = (1, 2, 14, 1)$
$241: P_{3931} = (10, 4, 14, 1)$
$242: P_{3933} = (12, 4, 14, 1)$
$243: P_{3934} = (13, 4, 14, 1)$
$244: P_{3945} = (8, 5, 14, 1)$
$245: P_{3957} = (4, 6, 14, 1)$
$246: P_{3976} = (7, 7, 14, 1)$
$247: P_{4000} = (15, 8, 14, 1)$
$248: P_{4002} = (1, 9, 14, 1)$
$249: P_{4019} = (2, 10, 14, 1)$
$250: P_{4034} = (1, 11, 14, 1)$
$251: P_{4076} = (11, 13, 14, 1)$
$252: P_{4121} = (8, 0, 15, 1)$
$253: P_{4124} = (11, 0, 15, 1)$
$254: P_{4126} = (13, 0, 15, 1)$
$255: P_{4148} = (3, 2, 15, 1)$
$256: P_{4173} = (12, 3, 15, 1)$
$257: P_{4175} = (14, 3, 15, 1)$
$258: P_{4176} = (15, 3, 15, 1)$
$259: P_{4180} = (3, 4, 15, 1)$
$260: P_{4194} = (1, 5, 15, 1)$
$261: P_{4197} = (4, 5, 15, 1)$
$262: P_{4207} = (14, 5, 15, 1)$
$263: P_{4212} = (3, 6, 15, 1)$
$264: P_{4214} = (5, 6, 15, 1)$
$265: P_{4223} = (14, 6, 15, 1)$
$266: P_{4248} = (7, 8, 15, 1)$
$267: P_{4249} = (8, 8, 15, 1)$
$268: P_{4250} = (9, 8, 15, 1)$
$269: P_{4278} = (5, 10, 15, 1)$
$270: P_{4300} = (11, 11, 15, 1)$
$271: P_{4310} = (5, 12, 15, 1)$
$272: P_{4334} = (13, 13, 15, 1)$