

Tables des nombres de classes et unités
des corps quintiques cycliques
de conducteur $f \leq 10000$

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1 Identification des corps étudiés

Soit K/\mathbb{Q} une extension cyclique de degré $l = 5$, de conducteur f et de groupe de Galois $G = \langle \sigma \rangle$.

On sait que $Gal(\mathbb{Q}(\mu_f)/\mathbb{Q})$ est canoniquement isomorphe à $(\mathbb{Z}/f\mathbb{Z})^\times$; on note H le sous-groupe de $(\mathbb{Z}/f\mathbb{Z})^\times$, image de $Gal(\mathbb{Q}(\mu_f)/K)$ par cet isomorphisme (H est appelé le groupe d'Artin de K), et soit H^+ un système exact de représentants impairs de $H/\{+1, -1\}$. On pose :

$$f = \prod_{i=1}^k p_i^{n_i},$$

p_i premiers distincts, où $n_i = 1$ si $p_i \neq l$ et $n_i = 2$ si $p_i = l$. Il est clair que $p_i = l$ ou $p_i \equiv 1(l)$, et que tout p_i est alors totalement ramifié dans K . Il existe donc, pour f donné, $(l-1)^{k-1}$ corps cycliques de degré premier impair l et de conducteur f .

Soit χ un caractère associé à K ($\chi : (\mathbb{Z}/f\mathbb{Z})^\times \rightarrow \mathbb{C}^\times$, dont le noyau est H). On sait que l'ensemble $\{\chi^a, a \bmod f, (a, f) = 1\}$ caractérise K . On a

$$(\mathbb{Z}/f\mathbb{Z})^\times \simeq \prod_{i=1}^k (\mathbb{Z}/p_i^{n_i}\mathbb{Z})^\times,$$

il s'ensuit, en désignant par $(\mathbb{Z}/q\mathbb{Z})^{\times\perp}$ le groupe des caractères de $(\mathbb{Z}/q\mathbb{Z})^\times$, l'isomorphisme canonique:

$$(\mathbb{Z}/f\mathbb{Z})^{\times\perp} \simeq \prod_{i=1}^k (\mathbb{Z}/p_i^{n_i}\mathbb{Z})^{\times\perp}.$$

On peut ainsi écrire tout caractère χ de $(\mathbb{Z}/f\mathbb{Z})^\times$ sous la forme $\chi = (\dots, \chi_i, \dots)$, $\chi_i \in (\mathbb{Z}/p_i^{n_i}\mathbb{Z})^{\times\perp}$, $1 \leq i \leq k$. On précise ces isomorphismes en écrivant tout d'abord :

$$(\mathbb{Z}/f\mathbb{Z})^\times = \bigoplus_{i=1}^k G_i,$$

où les G_i correspondent aux sous-groupes $Gal(\mathbb{Q}(\mu_f)/\mathbb{Q}(\mu_{\bar{f}_i})) \simeq Gal(\mathbb{Q}(\mu_{f_i})/\mathbb{Q})$, en notant $f_i = p_i^{n_i}$ et $\bar{f}_i = f/f_i$ pour tout p_i divisant f ; on a alors $G_i = \{a \in (\mathbb{Z}/f\mathbb{Z})^\times, a \equiv 1(\bar{f}_i)\}$. De même :

$$(\mathbb{Z}/f\mathbb{Z})^{\times\perp} = \bigoplus_{i=1}^k G_i^\perp,$$

où les éléments de G_i^\perp (notés encore χ_i) sont les caractères de $\mathbb{Q}(\mu_{f_i})$, et tout caractère χ de $(\mathbb{Z}/f\mathbb{Z})^\times$ s'écrit de façon unique :

$$\chi = \prod_{i=1}^k \chi_i, \quad \chi_i \in G_i^\perp.$$

Soient maintenant $g_1, \dots, g_k \in (\mathbb{Z}/f\mathbb{Z})^\times$ des générateurs respectifs des sous-groupes G_i , et soit ζ_l une racine primitive l -ième de l'unité ; définissons, pour chaque i , $1 \leq i \leq k$, un caractère χ_i d'ordre l de G_i en posant :

$$\begin{aligned} \chi_i(g_i) &= \zeta_l, \\ \chi_i(g_j) &= 1, \quad \forall j \neq i. \end{aligned}$$

On définit alors un corps cyclique K , de degré premier impair l et de conducteur f , par un caractère dont le noyau est H en posant :

$$\chi = \prod_{i=1}^k \chi_i^{a_i}, \quad a_i \in \{1, \dots, l-1\}.$$

On remarque que si le k -uplet (a_1, \dots, a_k) correspond à K , le k -uplet $(\lambda a_1, \dots, \lambda a_k) \pmod l$, où λ est un entier rationnel non nul modulo l , correspond lui-aussi à K .

2 Rappel sur les unités des corps abéliens

La méthode de dévissage de l'unité cyclotomique utilise le fait que E est un $\mathbb{Z}[\mu_l]$ -module sans torsion de rang 1 et que F en est un sous- $\mathbb{Z}[\mu_l]$ -module libre. En effet, on a :

$$F = \langle \eta \rangle_{\mathbb{Z}[\mu_l]},$$

où η est l'unité cyclotomique génératrice de F que l'on obtient comme suit :

Soient $\zeta = \exp(2i\pi/f)$, $\zeta' = \exp(i\pi/f)$ et σ_g un automorphisme de $\mathbb{Q}(\mu_f)$ défini par $\sigma_g : \zeta \rightarrow \zeta^g$ tel que σ_g restreint à K donne σ . Puisque f est impair et que g est une classe modulo f , on peut choisir g impair (g ou $g + f$ est impair) afin de préserver la signature de η qui est connue grâce au lemme suivant (cf. [G]) :

Lemme 2.1 On a $\eta = \pm \prod_{x \in H^+} \frac{\sin(x\pi/f)}{\sin(xg\pi/f)}$,

3 Tables des corps quintiques cycliques de conducteur $f \leq 10000$

Le programme mis au point, permettant de calculer le nombre de classes et les unités de tous les corps cycliques de degré $l = 5$, utilise la méthode de dévissage de l'unité cyclotomique et reprend à sa base l'algorithme GALCYCL élaboré par G.Gras dans [GG].

La quatrième colonne de la table suivante donne le k -uplet (a_1, \dots, a_k) (correspondant au corps K que l'on étudie) où l'un des a_i , $1 \leq i \leq k$, est égal à 1.

La cinquième colonne donne l'entier $gen \in (\mathbb{Z}/f\mathbb{Z})^\times$ dont le Frobenius est générateur de $Gal(K/\mathbb{Q})$. La table donne le polynôme $p(x)$ d'une unité fondamentale génératrice de E (vu comme $\mathbb{Z}[\mu]$ -module) dans le cas où K n'est pas principal. Dans le cas contraire l'unité fondamentale génératrice de E est l'unité cyclotomique η .

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
25	1	2	1	2	1
11	1	2	1	2	1
31	1	3	1	3	1
41	1	6	1	6	1
61	1	2	1	2	1
71	1	7	1	7	1
101	1	2	1	2	1
131	1	2	1	2	1
151	1	2	1	2	1
181	1	2	1	2	1
191	1	19	1	19	11
$x^5 + 54x^4 + 135x^3 - 70x^2 + 4x + 1$					
211	1	2	1	2	1
241	1	7	1	7	1
251	1	6	1	6	1
271	1	6	1	6	1
275 = 25.11	2	12, 51	(1, 1)	12	5
$x^5 - 70x^4 + 695x^3 + 1050x^2 + 240x - 1$					
275 = 25.11	2	12, 51	(2, 1)	12	5
$x^5 - 6120x^4 - 157705x^3 + 729250x^2 - 6360x - 1$					
275 = 25.11	2	12, 51	(3, 1)	12	5
$x^5 - 345x^4 - 121130x^3 - 3395750x^2 + 71465x - 1$					
275 = 25.11	2	12, 51	(4, 1)	12	5
$x^5 - 70x^4 + 145x^3 + 225x^2 - 35x - 1$					
281	1	3	1	3	1
311	1	17	1	17	1
331	1	3	1	3	1
341 = 11.31	2	63, 12	(1, 1)	63	5
$x^5 + 1107x^4 - 177703x^3 - 1723574x^2 + 5817x - 1$					
341 = 11.31	2	63, 12	(2, 1)	63	5
$x^5 + 11027683x^4 - 234041982x^3 - 186636962x^2 - 172867x - 1$					
341 = 11.31	2	63, 12	(3, 1)	63	5
$x^5 + 84x^4 - 724x^3 + 181x^2 + 20x - 1$					

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
341 = 11.31	2	63, 12	(4, 1)	63	5
$x^5 - 257x^4 + 12575x^3 + 3591x^2 + 20x - 1$					
$p(x)$					
401	1	3	1	3	1
421	1	2	1	2	1
431	1	7	1	7	1
451 = 11.41	2	83, 12	(1, 1)	83	5
$x^5 - 3985x^4 + 3785449x^3 + 2666294x^2 + 8075x - 1$					
451 = 11.41	2	83, 12	(2, 1)	83	5
$x^5 + 74x^4 - 2049x^3 - 1822x^2 + 408x - 1$					
451 = 11.41	2	83, 12	(3, 1)	83	5
$x^5 - 48657865x^4 - 10946682618x^3 - 9794080182x^2 + 524921x - 1$					
451 = 11.41	2	83, 12	(4, 1)	83	5
$x^5 + 1427x^4 - 25501x^3 + 4041x^2 + 408x - 1$					
461	1	2	1	2	1
491	1	2	1	2	1
521	1	3	1	3	1
541	1	2	1	2	1
571	1	3	1	3	1
601	1	7	1	7	1
631	1	3	1	3	11
$x^5 - 122x^4 + 2420x^3 + 14779x^2 - 16370x + 1$					
641	1	3	1	3	11
$x^5 + 5248113x^4 + 7244174x^3 - 2815090x^2 + 242801x + 1$					
661	1	2	1	2	1
671 = 11.61	2	62, 67	(1, 1)	62	5
$x^5 - 1164x^4 + 19652x^3 + 20425x^2 + 3238 - 1$					
671 = 11.61	2	62, 67	(2, 1)	62	5
$x^5 - 18609x^4 - 1552112721x^3 - 131516376x^2 + 77048x - 1$					
671 = 11.61	2	62, 67	(3, 1)	62	5
$x^5 - 6532x^4 + 1467670x^3 - 46583209x^2 - 37022x - 1$					
671 = 11.61	2	62, 67	(4, 1)	62	5
$x^5 - 153481x^4 + 8478278x^3 + 5280394x^2 + 11961x - 1$					
691	1	3	1	3	1
701	1	2	1	2	1

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
751	1	3	1	3	1
761	1	6	1	6	1
775 = 25.31	2	63, 176	(1, 1)	63	5
$x^5 + 26706063515x^4 + 28012225465930x^3 + 796319168710x^2 + 108968725x - 1$					
775 = 25.31	2	63, 176	(2, 1)	63	5
$x^5 - 4364960x^4 + 25055289505x^3 + 79000235x^2 + 50225x - 1$					
775 = 25.31	2	63, 176	(3, 1)	63	5
$x^5 - 160x^4 - 1695x^3 - 3265x^2 + 625x - 1$					
775 = 25.31	2	63, 176	(4, 1)	63	5
$x^5 - 4810x^4 + 24655x^3 + 23860x^2 - 1700x - 1$					
781 = 11.71	2	72, 56	(1, 1)	72	5
$x^5 + 22453x^4 - 5796367x^3 - 174000x^2 + 2897x - 1$					
781 = 11.71	2	72, 56	(2, 1)	72	5
$x^5 - 196x^4 - 6814x^3 - 54507x^2 + 3678x - 1$					
781 = 11.71	2	72, 56	(3, 1)	72	5
$x^5 + 331349207x^4 + 34066434529x^3 - 7775368735x^2 - 232184x - 1$					
781 = 11.71	2	72, 56	(4, 1)	72	5
$x^5 - 3541848473x^4 + 101569333718x^3 + 7883591450x^2 + 146601x - 1$					
811	1	3	1	3	1
821	1	2	1	2	1
881	1	2	1	2	1
911	1	17	1	17	1
941	1	2	1	2	16
$x^5 - 16x^4 - 274x^3 - 817x^2 + 178x - 1$					
971	1	6	1	6	1
991	1	6	1	6	1
1021	1	10	1	10	1
1025 = 25.41	2	42, 26	(1, 1)	42	5
$x^5 - 28087745x^4 + 39271750754270x^3 + 85442622850x^2 - 32530335x - 1$					
1025 = 25.41	2	42, 26	(2, 1)	42	5
$x^5 - 1720x^4 + 2970x^3 + 1475x^2 + 90x - 1$					
1025 = 25.41	2	42, 26	(3, 1)	42	5
$x^5 + 330x^4 + 23470x^3 - 129725x^2 - 12210x - 1$					

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
1025 = 25.41	2	42, 26	(4, 1)	42	5
$x^5 - 4795x^4 - 16505x^3 - 14925x^2 - 4010x - 1$					
1031	1	14	1	14	1
1051	1	7	1	7	1
1061	1	2	1	2	1
1091	1	2	1	2	1
1111 = 11.101	2	304, 12	(1, 1)	304	5
$x^5 - 21289x^4 + 52956x^3 + 45611x^2 - 11079x - 1$					
1111 = 11.101	2	304, 12	(2, 1)	304	5
$x^5 - 180x^4 - 1483x^3 - 1051x^2 + 2253x - 1$					
1111 = 11.101	2	304, 12	(3, 1)	304	5
$x^5 - 508669137819x^4 + 7215250189081002x^3 + 5532073174554118x^2 - 27386004492299x - 1$					
1111 = 11.101	2	304, 12	(4, 1)	304	5
$x^5 + 5879232x^4 - 2017007840527x^3 + 617196102055x^2 - 3271070607x - 1$					
1151	1	17	1	17	1
1171	1	2	1	2	1
1181	1	7	1	7	1
1201	1	11	1	11	1
1231	1	3	1	3	1
1271 = 31.41	2	42, 63	(1, 1)	42	5
$x^5 - 166550x^4 - 106786426x^3 + 6310661x^2 + 41736x - 1$					
1271 = 31.41	2	42, 63	(2, 1)	42	5
$x^5 - 653609257x^4 + 120066881130950x^3 - 40204709078x^2 - 579783x - 1$					
1271 = 31.41	2	42, 63	(3, 1)	42	5
$x^5 - 1320x^4 - 105041x^3 + 57993334x^2 + 16316x - 1$					
1271 = 31.41	2	42, 63	(4, 1)	42	55 = 5.11
$x^5 + 73x^4 + 1369x^3 + 1685x^2 + 226x - 1$					
1291	1	2	1	2	1
1301	1	2	1	2	1
1321	1	13	1	13	1
1361	1	3	1	3	1
1381	1	2	1	2	1

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
1441 = 11.131	2	525, 23	(1, 1)	525	5
$x^5 - 144352620x^4 - 231493813x^3 + 153515176x^2 - 15561618x - 1$					
1441 = 11.131	2	525, 23	(2, 1)	525	5
$x^5 + 7962521x^4 - 138540667x^3 - 95076057x^2 - 145800x - 1$					
1441 = 11.131	2	525, 23	(3, 1)	525	5
$x^5 - 4768x^4 - 98033x^3 + 395957x^2 - 259x - 1$					
1441 = 11.131	2	525, 23	(4, 1)	525	5
$x^5 + 568491347x^4 + 65525680949266x^3 - 686339909858514x^2 - 9528053651x - 1$					
1451	1	2	1	2	1
1471	1	6	1	6	1
1481	1	3	1	3	1
1511	1	11	1	11	1
1525 = 25.61	2	62, 26	(1, 1)	62	5
$x^5 - 3760264465x^4 + 203199995150x^3 - 65855949870x^2 - 2235855x - 1$					
1525 = 25.61	2	62, 26	(2, 1)	62	5
$x^5 - 17065x^4 + 4725150x^3 - 83370870x^2 - 210655x - 1$					
1525 = 25.61	2	62, 26	(3, 1)	62	5
$x^5 + 3453835x^4 - 219045725x^3 - 92604745x^2 + 59270x - 1$					
1525 = 25.61	2	62, 26	(4, 1)	62	5
$x^5 - 14015x^4 - 182067525x^3 + 1028294655x^2 + 446620x - 1$					
1511	1	11	1	11	1
1531	1	2	1	2	1
1571	1	2	1	2	1
1601	1	3	1	3	1
1621	1	2	1	2	1
1661 = 11.151	2	303, 12	(1, 1)	303	5
$x^5 - 18868x^4 - 3026338296x^3 - 2918459485x^2 + 153132x - 1$					
1661 = 11.151	2	303, 12	(2, 1)	303	5
$x^5 + 868106x^4 + 280503418x^3 - 1759613005x^2 - 2268663242x - 1$					
1661 = 11.151	2	303, 12	(3, 1)	303	5
$x^5 + 1064x^4 - 971303x^3 - 23265062x^2 - 2464604x - 1$					
1661 = 11.151	2	303, 12	(4, 1)	303	5
$x^5 - 597x^4 - 125854x^3 - 305059x^2 - 1341x - 1$					

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
1721	1	3	1	3	1
1741	1	2	1	2	1
1775 = 25.71	2	72, 126	(1, 1)	72	5
$x^5 - 8569725x^4 - 427902254814535x^3 - 6583092168237680x^2 - 859742265x - 1$					
1775 = 25.71	2	72, 126	(2, 1)	72	5
$x^5 - 1181636016825x^4 + 342247626775182452620790x^3 - 178480367673497166197830x^2 - 846264186615x - 1$					
1775 = 25.71	2	72, 126	(3, 1)	72	5
$x^5 - 31975x^4 - 60810x^3 - 12255x^2 + 7385x - 1$					
1775 = 25.71	2	72, 126	(4, 1)	72	80 = 16.5
$x^5 + 85x^4 + 1825x^3 + 1205x^2 - 230x - 1$					
1801	1	11	1	11	1
1811	1	3	1	3	1
1861	1	2	1	2	11
$x^5 + 210266x^4 - 16126390x^3 - 7841521x^2 + 1302768x + 1$					
1871	1	14	1	14	1
1891 = 31.61	2	489, 63	(1, 1)	489	5
$x^5 + 8861x^4 + 1148281x^3 - 30177890x^2 + 354397x - 1$					
1891 = 31.61	2	489, 63	(2, 1)	489	5
$x^5 + 278938925x^4 - 9050628116x^3 - 3782933575x^2 - 485207x - 1$					
1891 = 31.61	2	489, 63	(3, 1)	489	5
$x^5 - 953890961x^4 + 6701588796942x^3 + 1709083365672786x^2 - 370410191x - 1$					
1891 = 31.61	2	489, 63	(4, 1)	489	5
$x^5 + 99629x^4 - 611766421x^3 - 5710241x^2 - 10566x - 1$					
1901	1	2	1	2	1
1931	1	3	1	3	1
1991 = 11.181	2	182, 23	(1, 1)	182	5
$x^5 - 4607x^4 + 1348859x^3 - 3250843x^2 - 24768x - 1$					
1991 = 11.181	2	182, 23	(2, 1)	182	5
$x^5 - 180740436697225x^4 - 8513019710989141135386x^3 - 175580756715461020662x^2 + 22923451376243609x - 1$					
1991 = 11.181	2	182, 23	(3, 1)	182	5
$x^5 - 422717x^4 - 50922059941x^3 + 780858200703x^2 - 925186720x - 1$					

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
1991 = 11.181	2	182, 23	(4, 1)	182	5
$x^5 - 376924x^4 - 7932961349x^3 + 41644728068x^2 + 3651381628x - 1$					
2011	1	3	1	3	1
2081	1	3	1	3	1
2101 = 11.191	2	574, 56	(1, 1)	574	5
$x^5 + 181240850x^4 - 64848013817x^3 - 482984839477x^2 - 16573829x - 1$					
2101 = 11.191	2	574, 56	(2, 1)	574	5
$x^5 - 36290352209x^4 - 6334327661842x^3 - 4787458620590x^2 + 2294805210129x - 1$					
2101 = 11.191	2	574, 56	(3, 1)	574	5
$x^5 + 4388x^4 - 5271017x^3 + 8575317x^2 - 690269x - 1$					
2101 = 11.191	2	574, 56	(4, 1)	574	5
$x^5 + 149357x^4 + 94188222x^3 - 36764263x^2 - 110393x - 1$					
2111	1	7	1	7	1
2131	1	2	1	2	1
2141	1	2	1	2	1
2161	1	23	1	23	16
$x^5 + 38708510x^4 - 7787862611x^3 - 653234794177x^2 + 526865209x - 1$					
2201 = 31.71	2	427, 63	(1, 1)	427	5
$x^5 - 4875046816020033x^4 - 26095845046769378x^3 - 64598151994046x^2 + 16087521x - 1$					
2201 = 31.71	2	427, 63	(2, 1)	427	5
$x^5 - 49186x^4 + 13484819x^3 + 8585554x^2 - 17196x - 1$					
2201 = 31.71	2	427, 63	(3, 1)	427	5
$x^5 + 5945351441x^4 - 887663164246x^3 + -156477347605x^2 + 13551969x - 1$					
2201 = 31.71	2	427, 63	(4, 1)	427	5
$x^5 + 195125x^4 + 4962877921x^3 + 2173713656x^2 - 257105x - 1$					
2221	1	2	1	2	1
2251	1	7	1	7	1
2281	1	7	1	7	1

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
2311	1	3	1	3	1
2321 = 11.211	2	634, 133	(1, 1)	634	5
$x^5 + 6027378895646535687x^4$ $-2350184808591064618170411953482x^3$ $-9982612212236505425414x^2 + 255511409481x - 1$					
2321 = 11.211	2	634, 133	(2, 1)	634	5
$x^5 + 2595204x^4 - 1076851356x^3 - 25868255x^2 + 13990x - 1$					
2321 = 11.211	2	634, 133	(3, 1)	634	305 = 5.61
$x^5 + 2647x^4 + 4446x^3 - 137649x^2 + 2385x - 1$					
2321 = 11.211	2	634, 133	(4, 1)	634	5
$x^5 + 3282220x^4 + 85568111x^3 + 552678131x^2 - 2782815x - 1$					
2341	1	7	1	7	1
2351	1	13	1	13	11
$x^5 - 1652492646107x^4 + 267284692295370x^3$ $+16592167113466x^2 - 63093483x + 1$					
2371	1	2	1	2	1
2381	1	3	1	3	1
2411	1	6	1	6	1
2441	1	6	1	6	1
2501 = 41.61	2	306, 124	(1, 1)	306	5
$x^5 + 231161307259713097551x^4 - 8837550903201773295739058x^3$ $+1838559651188034994x^2 - 8646476367x - 1$					
2501 = 41.61	2	306, 124	(2, 1)	306	5
$x^5 - 4206117x^4 + 8336708489x^3 - 8400158x^2 - 4110803x - 1$					
2501 = 41.61	2	306, 124	(3, 1)	306	5
$x^5 - 647194x^4 + 16781849x^3 + 510905x^2 + 841 - 1$					
2501 = 41.61	2	306, 124	(4, 1)	306	5
$x^5 + 10569x^4 - 28858900x^3 - 60328421x^2 - 18051377x - 1$					
2521	1	17	1	17	1
2525 = 25.101	2	102, 26	(1, 1)	102	5
$x^5 + 72245x^4 + 293319510x^3 - 19848885x^2 + 9005x - 1$					
2525 = 25.101	2	102, 26	(2, 1)	102	5
$x^5 + 290027728195x^4 - 120448590109716802590x^3$ $-6788802728493480793041410x^2 - 328760993452195x - 1$					
2525 = 25.101	2	102, 26	(3, 1)	102	5
$x^5 + 355045x^4 + 5232355860x^3 + -12966015x^2 + 3955x - 1$					

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
2525 = 25.101	2	102, 26	(4, 1)	102	5
$x^5 - 602034205x^4 - 865464761749265x^3 + 72933833246169109640x^2 - 26971465295x - 1$					
2531	1	2	1	2	1
2551	1	6	1	6	1
2591	1	7	1	7	1
2621	1	2	1	2	1
2651 = 11.241	2	965, 34	(1, 1)	965	25
$x^5 + 754751x^4 + 3374405790x^3 - 21527659765x^2 + 348921x - 1$					
2651 = 11.241	2	965, 34	(2, 1)	965	25
$x^5 + 191534x^4 - 4409976873x^3 + 2956837178x^2 + 300480x - 1$					
2651 = 11.241	2	965, 34	(3, 1)	965	25
$x^5 - 363730x^4 - 5065056566x^3 - 12782463279295x^2 - 8838722x - 1$					
2651 = 11.241	2	965, 34	(4, 1)	965	25
$x^5 + 29766813x^4 + 3594871144x^3 + 13071196273x^2 + 6461645 - 1$					
2671	1	7	1	7	1
2711	1	7	1	7	1
2731	1	3	1	3	1
2741	1	2	1	2	1
2761 = 11.251	2	503, 34	(1, 1)	503	5
$x^5 + 112145051x^4 + 859169632667458x^3 + 1902742288811270x^2 + 6940179462973x - 1$					
2761 = 11.251	2	503, 34	(2, 1)	503	5
$x^5 - 27213663x^4 + 25888750181879x^3 - 68200269923000x^2 - 16597033x - 1$					
2761 = 11.251	2	503, 34	(3, 1)	503	5
$x^5 - 36534799x^4 - 2306557659371x^3 + 2041004444110x^2 - 6105233x - 1$					
2761 = 11.251	2	503, 34	(4, 1)	503	5
$x^5 - 680453x^4 - 477951616833x^3 + 360647662578x^2 + 179964079x - 1$					
2801	1	3	1	3	1
2851	1	2	1	2	1
2861	1	2	1	2	1
2911 = 41.71	2	356, 42	(1, 1)	356	5
$x^5 + 1647905x^4 + 338207421378x^3 + 94848600441x^2 + 138455X - 1$					

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
2911 = 41.71	2	356, 42	(2, 1)	356	5
$x^5 - 71821204749x^4 - 550245743776835x^3 - 90456968638875x^2 - 5566016666x - 1$					
2911 = 41.71	2	356, 42	(3, 1)	356	5
$x^5 - 46744983165469x^4 - 5003112041118396798x^3 - 40105059284898x^2 - 14131267x - 1$					
2911 = 41.71	2	356, 42	(4, 1)	356	5
$x^5 + 279x^4 - 625003x^3 - 8369348x^2 - 3180085x - 1$					
2971	1	10	1	10	1
2981 = 11.271	2	272, 133	(1, 1)	272	5
$x^5 - 17236913x^4 - 664958661x^3 - 4396385133x^2 + 18713214x - 1$					
2981 = 11.271	2	272, 133	(2, 1)	272	5
$x^5 - 5106713118x^4 - 357168814996x^3 - 400874405137x^2 + 7641780x - 1$					
2981 = 11.271	2	272, 133	(3, 1)	272	5
$x^5 - 443966281186613377943903432017x^4 - 328729754465437081316888607802802x^3 + 21564737806811672455220790014206802x^2 - 592940379849720844367x - 1$					
2981 = 11.271	2	272, 133	(4, 1)	272	5
$x^5 + 184051x^4 + 8459494809x^3 - 2471729312x^2 + 132641x - 1$					
3001	1	14	1	14	11
$x^5 - 4937022x^4 - 23741798263x^3 + 2863122794x^2 - 86142718x + 1$					
3011	1	2	1	2	1
3041	1	3	1	3	1
3061	1	6	1	6	1
3091 = 11.281	2	282, 12	(1, 1)	282	80 = 16.5
$x^5 - 430x^4 + 2867x^3 + 718x^2 + 36x - 1$					
3091 = 11.281	2	282, 12	(2, 1)	282	5
$x^5 + 19062309x^4 + 135905160x^3 + 27326671x^2 + 55279x - 1$					
3091 = 11.281	2	282, 12	(3, 1)	282	5
$x^5 + 7718293463959549075510171x^4 + 56073876538827712526008456146841450x^3 + 30923186437566504506062346630x^2 - 8216463367095091928651x - 1$					

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
3091 = 11.281	2	282, 12	(4, 1)	282	5
$x^5 - 12961649560572x^4 - 4203512360438722878295897x^3 - 80120994517651928249x^2 + 3698576263551x - 1$					
3121	1	7	1	7	1
3131 = 31.101	2	203, 63	(1, 1)	203	5
$x^5 + 6777904756479544024379x^4 + 76583727971624067594169695017886744010x^3 - 35601200407770952142233263984037018x^2 - 4005140297546600747x - 1$					
3131 = 31.101	2	203, 63	(2, 1)	203	5
$x^5 - 25462676x^4 - 39722031x^3 - 8161266x^2 - 15336x - 1$					
3131 = 31.101	2	203, 63	(3, 1)	203	5
$x^5 - 521130x^4 + 62169819524x^3 - 472459582813x^2 - 32402400x - 1$					
3131 = 31.101	2	203, 63	(4, 1)	203	5
$x^5 - 662025x^4 + 2408705x^3 + 6188107x^2 - 798086x - 1$					
3181	1	7	1	7	1
3191	1	11	1	11	1
3221	1	10	1	10	1
3251	1	6	1	6	1
3271	1	3	1	3	1
3275 = 25.131	2	263, 26	(1, 1)	263	5
$x^5 + 167890x^4 + 119347505x^3 + 345720210x^2 + 13248950x - 1$					
3275 = 25.131	2	263, 26	(2, 1)	263	5
$x^5 - 642085810x^4 - 403095881845x^3 - 13157334040x^2 + 234100x - 1$					
3275 = 25.131	2	263, 26	(3, 1)	263	5
$x^5 + 113191415x^4 - 7800565345x^3 - 151999966715x^2 + 176350500x - 1$					
3275 = 25.131	2	263, 26	(4, 1)	263	5
$x^5 + 588855408675666375x^4 + 2166100948412269828614945919190x^3 - 206858641739110784352411503087691126924230x^2 + 76596269759237011878060585x - 1$					
3301	1	6	1	6	16
$x^5 - 5259161x^4 - 5312497589514x^3 + 49611786048282x^2 - 50384216439x - 1$					

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
3331	1	3	1	3	1
3361	1	22	1	22	1
3371	1	2	1	2	1
3391	1	3	1	3	1
3421 = 11.311	2	623, 23	(1, 1)	623	5
$x^5 - 1735385x^4 - 645109891242x^3 + 2726458618x^2 - 100759x - 1$					
3421 = 11.311	2	623, 23	(2, 1)	623	5
$x^5 - 91724370552697x^4 + 3164261357275359165256374x^3 - 8897320649297355605899193478x^2 - 198551173271231557303x - 1$					
3421 = 11.311	2	623, 23	(3, 1)	623	5
$x^5 - 1988539x^4 + 314409038017x^3 - 21338487199x^2 - 3683700140x - 1$					
3421 = 11.311	2	623, 23	(4, 1)	623	5
$x^5 - 4359x^4 - 2848750x^3 - 407871845x^2 + 4465563169x - 1$					
3461	1	2	1	2	1
3491	1	2	1	2	1
3511	1	7	1	7	1
3541	1	7	1	7	1
3571	1	2	1	2	1
3581	1	2	1	2	11
$x^5 - 138489x^4 - 70760893x^3 - 1691065513x^2 - 3279844x + 1$					
3631	1	15	1	15	1
3641 = 11.331	2	332, 210	(1, 1)	332	5
$x^5 - 3858947340209x^4 - 72782593975658966194258x^3 - 1310632535234887734200462x^2 + 1789810499076502220433x - 1$					
3641 = 11.331	2	332, 210	(2, 1)	332	5
$x^5 + 4404309872x^4 - 3497771017078163x^3 - 14061306331290316x^2 + 439938808666 - 1$					
3641 = 11.331	2	332, 210	(3, 1)	332	5
$x^5 - 62188x^4 - 91367607x^3 + 15779209392x^2 - 774982258x - 1$					
3641 = 11.331	2	332, 210	(4, 1)	332	5
$x^5 + 17083281x^4 + 121917985320x^3 + 5676725335755x^2 + 30448293089x - 1$					
3671	1	13	1	13	1
3691	1	2	1	2	1
3701	1	2	1	2	1

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
3761	1	3	1	3	1
3775 = 25.151	2	152, 51	(1, 1)	152	5
$x^5 - 175255x^4 - 8831665515x^3 + 1876737590x^2 + 7393755x - 1$					
3775 = 25.151	2	152, 51	(2, 1)	152	5
$x^5 - 503680x^4 - 5307815x^3 + 6523315x^2 + 772405x - 1$					
3775 = 25.151	2	152, 51	(3, 1)	152	5
$x^5 - 34252180x^4 - 1020814465865x^3 + 1942390094333615x^2 + 62567252455x - 1$					
3775 = 25.151	2	152, 51	(4, 1)	152	5
$x^5 + 14120670x^4 + 14418438083510x^3 + 1595964415x^2 + 6080x - 1$					
3821	1	3	1	3	1
3851	1	2	1	2	1
3881	1	13	1	13	1
3911	1	13	1	13	1
3931	1	2	1	2	$256 = 16^2$
$x^5 - 485x^4 + 3677x^3 + 1052x^2 + 81x + 1$					
4001	1	3	1	3	1
4021	1	2	1	2	1
4051	1	10	1	10	1
4061 = 31.131	2	394, 187	(1, 1)	394	5
$x^5 + 37594x^4 + 73453590x^3 - 186938003x^2 - 5828662x - 1$					
4061 = 31.131	2	394, 187	(2, 1)	394	5
$x^5 + 118814x^4 + 118088041x^3 + 783787193x^2 + 3856823x - 1$					
4061 = 31.131	2	394, 187	(3, 1)	394	5
$x^5 + 775832161137947x^4 + 60171433322696719512074x^3 + 505675305573696312053008373958x^2 + 1380597773114558061525x - 1$					
4061 = 31.131	2	394, 187	(4, 1)	394	5
$x^5 + 193371277610x^4 - 206175811909204768415x^3 - 118974505496882754512989x^2 + 1065915795097237x - 1$					
4091	1	2	1	2	1
4111	1	12	1	12	1
4141 = 41.101	2	304, 42	(1, 1)	304	5
$x^5 - 4313806x^4 + 2141182335x^3 + 7443147015x^2 + 45859x - 1$					
4141 = 41.101	2	304, 42	(2, 1)	304	5
$x^5 - 626407x^4 - 17705098495x^3 - 1873850384x^2 + 3135045x - 1$					

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
4141 = 41.101	2	304, 42	(3, 1)	304	5
$x^5 - 1719211787292049144672037345x^4$ $-162019059592015531711552791090314242x^3$ $+5256956489315048499662841826x^2 + 197587322514518529x - 1$					
4141 = 41.101	2	304, 42	(4, 1)	304	5
$x^5 - 32797836x^4 + 1179408856117x^3 - 4631678484224x^2$ $-109876986x - 1$					
4201	1	11	1	11	11
$x^5 + 425715305661x^4 - 1734269244369415x^3$ $-6477825888243331x^2 + 144276708x + 1$					
4211	1	6	1	6	1
4231	1	3	1	3	1
4241	1	3	1	3	1
4261	1	2	1	2	1
4271	1	7	1	7	1
4331 = 61.71	2	214, 62	(1, 1)	214	5
$x^5 + 106344311x^4 - 400429188572646x^3 + 71424294577655x^2$ $-1104024741x - 1$					
4331 = 61.71	2	214, 62	(2, 1)	214	5
$x^5 - 1274619488062x^4 + 48177835229832254759x^3$ $-605365915545087x^2 - 373272435x - 1$					
4331 = 61.71	2	214, 62	(3, 1)	214	5
$x^5 + 50472504244002406036525385144183x^4$ $-27345554503996562895120152876624974437434x^3$ $-298984016169878483233162422646x^2 + 717132397414207033x - 1$					
4331 = 61.71	2	214, 62	(4, 1)	214	5
$x^5 + 20716110x^4 + 7555373x^3 + 435938x^2 + 3462x - 1$					
4391	1	14	1	14	1
4411 = 11.401	2	402, 12	(1, 1)	402	55 = 5.11
$x^5 + 3222x^4 + 47637x^3 - 6806x^2 + 256x - 1$					
4411 = 11.401	2	402, 12	(2, 1)	402	5
$x^5 + 1572662560293566962915x^4$ $+33192784549384155847800164302914x^3$ $+8824145646175423406926512449502x^2 - 3442453080541967235x - 1$					
4411 = 11.401	2	402, 12	(3, 1)	402	5
$x^5 - 453891x^4 + 21959692035x^3 + 11819453738607x^2$ $-49774732x - 1$					

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
4411 = 11.401	2	402, 12	(4, 1)	402	5
$x^5 + 8073252988025733x^4 + 33604409015418525953542952249x^3$ $-247475053101459476207x^2 + 97803461100x - 1$					
4421	1	3	1	3	1
4441	1	21	1	21	1
4451	1	2	1	2	1
4481	1	3	1	3	1
4525 = 25.181	2	363, 76	(1, 1)	363	5
$x^5 + 2633239815x^4 - 3010822748902045x^3$ $+35689177402220860x^2 - 429947937275x - 1$					
4525 = 25.181	2	363, 76	(2, 1)	363	5
$x^5 + 2370485664431365x^4 - 557652413897763034345x^3$ $-216428760602280209365x^2 - 240825032850x - 1$					
4525 = 25.181	2	363, 76	(3, 1)	363	5
$x^5 - 55552428605774226585x^4 + 90266407964264322412630x^3$ $+8724649755663510628150810x^2 - 141991784395692286434775x - 1$					
4525 = 25.181	2	363, 76	(4, 1)	363	5
$x^5 + 159198283895840x^4 - 18297722330541866521145x^3$ $+57823644094271660x^2 + 27970628050x - 1$					
4561	1	11	1	11	1
4591	1	11	1	11	1
4621	1	2	1	2	1
4631 = 11.421	2	843, 23	(1, 1)	843	5
$x^5 - 38090814x^4 - 714468824x^3 - 260250393x^2 + 168532x - 1$					
4631 = 11.421	2	843, 23	(2, 1)	843	5
$x^5 - 17612209761592933x^4 - 704104489521260578095194x^3$ $+42702291263854073164493x^2 + 3813853065863897233x - 1$					
4631 = 11.421	2	843, 23	(3, 1)	843	5
$x^5 + 8052470x^4 + 279486376639x^3 + 4707542624679x^2$ $+1124209483x - 1$					
4631 = 11.421	2	843, 23	(4, 1)	843	5
$x^5 + 2553036884657736195979719x^4$ $-31426859901036219672370754017354x^3$ $-55454004119737686916504809285062x^2 + 343233343688524873x - 1$					
4651	1	3	1	3	1

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
4681 = 31.151	2	303, 63	(1, 1)	303	5
$x^5 - 292665522x^4 - 108872728914x^3 - 766420569x^2 - 288466x - 1$					
4681 = 31.151	2	303, 63	(2, 1)	303	5
$x^5 - 5132735264x^4 - 15899956741x^3 - 86304036x^2 + 3727832x - 1$					
4681 = 31.151	2	303, 63	(3, 1)	303	5
$x^5 - 11249378563424x^4 + 35023726742569663461895x^3 + 41363351469726779522465x^2 + 6592707026958273251x - 1$					
4681 = 31.151	2	303, 63	(4, 1)	303	5
$x^5 - 5079177838719x^4 - 256175741853988281x^3 - 5866824685012567991x^2 + 7085594008x - 1$					
4691	1	2	1	2	1
4721	1	6	1	6	1
4741 = 11.431	2	1294, 34	(1, 1)	1294	5
$x^5 - 5822249x^4 - 1853877960361x^3 + 18119289908x^2 + 169101x - 1$					
4741 = 11.431	2	1294, 34	(2, 1)	1294	5
$x^5 + 8879592x^4 - 2919866959x^3 + 60796306939x^2 + 1240395737x - 1$					
4741 = 11.431	2	1294, 34	(3, 1)	1294	5
$x^5 - 351135x^4 + 17850648422x^3 + 88359087085x^2 - 9768035x - 1$					
4741 = 11.431	2	1294, 34	(4, 1)	1294	5
$x^5 + 1177373399657451x^4 + 28798705861192005x^3 + 769821527265565x^2 - 1191566x - 1$					
4751	1	19	1	19	1
4775 = 25.191	2	192, 76	(1, 1)	192	5
$x^5 - 52854826445x^4 + 596718969245x^3 + 14093747100475x^2 + 7312440x - 1$					
4775 = 25.191	2	192, 76	(2, 1)	192	5
$x^5 + 542846324549055x^4 + 92316015366832294338270x^3 - 7022956132057446856604489365950x^2 + 1804540134551360306465x - 1$					
4775 = 25.191	2	192, 76	(3, 1)	192	5
$x^5 - 3388345x^4 - 26067701955x^3 - 80366905750x^2 + 6029509015x - 1$					
4775 = 25.191	2	192, 76	(4, 1)	192	5
$x^5 + 1403269355x^4 + 5364887448370x^3 - 248614262965450x^2 - 715080797480435x - 1$					

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
4801	1	7	1	7	1
4831	1	3	1	3	1
4861	1	11	1	11	1
4871	1	11	1	11	1
4931	1	6	1	6	1
4951	1	6	1	6	1
5011	1	2	1	2	1
5021	1	3	1	3	1
5051	1	2	1	2	1451
$x^5 + 49x^4 - 1060x^3 + 4765x^2 + 619x + 1$					
5071 = 11.461	2	1845, 12	(1, 1)	1845	5
$x^5 + 5098220x^4 - 134844698517x^3 - 88227387577x^2 + 920067x - 1$					
5071 = 11.461	2	1845, 12	(2, 1)	1845	5
$x^5 - 17381523x^4 + 1979529106477x^3 - 7159398211667910x^2 - 12008080145x - 1$					
5071 = 11.461	2	1845, 12	(3, 1)	1845	5
$x^5 + 1399221325863055740348x^4 + 4070761609772128966090343309x^3 + 603897339451442018840683x^2 - 753655116165x - 1$					
5071 = 11.461	2	1845, 12	(4, 1)	1845	80 = 16.5
$x^5 - 1648993x^4 - 41809609634x^3 - 224514602314078x^2 + 24098839649x - 1$					
5081	1	3	1	3	1
5101	1	6	1	6	1
5171	1	2	1	2	1
5231	1	7	1	7	1
5261	1	2	1	2	1
5275 = 25.211	2	212, 376	(1, 1)	212	5
$x^5 + 1060708449613385x^4 - 106278551865893536750x^3 - 91830185782272669245x^2 + 2352306348795x - 1$					
5275 = 25.211	2	212, 376	(2, 1)	212	5
$x^5 + 7015090582115805185x^4 - 3154016357221041833649950x^3 + 60003254608283770438655x^2 - 203959319955155x - 1$					
5275 = 25.211	2	212, 376	(3, 1)	212	5
$x^5 - 14251937128724594265x^4 - 28563612091642356276615850x^3 + 76989915154730215394650330x^2 - 4658674819639255x - 1$					

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
5275 = 25.211	2	212, 376	(4, 1)	212	5
$x^5 + 389410x^4 + 19900720325x^3 - 17451359170x^2 - 2125962930x - 1$					
5281	1	7	1	7	1
5351	1	11	1	11	1
5371 = 41.131	2	263, 83	(1, 1)	263	5
$x^5 + 3228753790565448x^4 - 39282606720720662096486x^3 + 1217159094079896129295063x^2 + 254298893847950x - 1$					
5371 = 41.131	2	263, 83	(2, 1)	263	5
$x^5 + 80642360538445051x^4 + 1101828538644243899562x^3 + 6784404265417391746662x^2 + 7654873619767426741x - 1$					
5371 = 41.131	2	263, 83	(3, 1)	263	5
$x^5 - 1957715404x^4 - 1085036627x^3 - 2055184x^2 + 3278x - 1$					
5371 = 41.131	2	263, 83	(4, 1)	263	5
$x^5 + 30705338979x^4 - 142383702009134x^3 - 2274510906219x^2 - 1244699117x - 1$					
5381	1	3	1	3	1
5401 = 11.491	2	492, 23	(1, 1)	492	5
$x^5 - 5554616x^4 + 1826992385236x^3 + 1266225587627201x^2 - 307327270x - 1$					
5401 = 11.491	2	492, 23	(2, 1)	492	5
$x^5 - 42105123589x^4 + 171663465200x^3 + 487847489605x^2 - 555454611x - 1$					
5401 = 11.491	2	492, 23	(3, 1)	492	5
$x^5 - 18993877321x^4 - 280740316501685242x^3 + 9656547975469337418x^2 + 683659556021353927161x - 1$					
5401 = 11.491	2	492, 23	(4, 1)	492	5
$x^5 - 1063221644x^4 - 84963569926x^3 - 1007271493x^2 - 64380x - 1$					
5431	1	3	1	3	1
5501	1	2	1	2	11
$x^5 - 459734712x^4 - 815797600954x^3 + 46227492317x^2 + 434009898x + 1$					
5521	1	11	1	11	1
5531	1	10	1	10	1
5581	1	6	1	6	1

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
5591	1	11	1	11	1
5611 = 31.181	2	363, 63	(1, 1)	363	5
$x^5 - 109327058882557x^4 - 26302099932973559847727646x^3$ $-105308802186637677619878778382658x^2$ $-6475184254095075837282083x - 1$					
5611 = 31.181	2	363, 63	(2, 1)	363	5
$x^5 + 426865x^4 + 13082516253x^3 - 109387695x^2 - 48014x - 1$					
5611 = 31.181	2	363, 63	(3, 1)	363	5
$x^5 + 17262x^4 + 40796010x^3 - 5475882759x^2 + 498062900x - 1$					
5611 = 31.181	2	363, 63	(4, 1)	363	55 = 5.11
$x^5 - 1970086x^4 + 103275208x^3 + 258319859x^2 - 132644x - 1$					
5641	1	14	1	14	1
5651	1	2	1	2	1
5701	1	2	1	2	1
5711	1	19	1	19	1
5731 = 11.521	2	1564, 23	(1, 1)	1564	5
$x^5 + 1911604987144749849551487567x^4$ $-20219265718209844135497207042066564578190706x^3$ $+487813638649386336760177880334263733490x^2$ $+61346391571610997171761x - 1$					
5731 = 11.521	2	1564, 23	(2, 1)	1564	5
$x^5 - 633159101281x^4 + 81812286584011818788x^3$ $+29542800067616763x^2 - 283890652407x - 1$					
5731 = 11.521	2	1564, 23	(3, 1)	1564	5
$x^5 + 4621295x^4 - 5478451773x^3 + 2796850643x^2 + 153427726x - 1$					
5731 = 11.521	2	1564, 23	(4, 1)	1564	5
$x^5 - 5467977159589445647x^4$ $-1216455385340959940802657617x^3 + 38609075999327685620531x^2$ $-1414142717888x - 1$					
5741	1	2	1	2	1
5791	1	6	1	6	1
5801	1	3	1	3	1
5821	1	6	1	6	1
5851	1	2	1	2	1
5861	1	3	1	3	1
5881	1	31	1	31	1

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
5921 = 31.191	2	383, 63	(1, 1)	383	25
$x^5 + 4521147658x^4 + 19221476199x^3 - 1524302157x^2 - 341925x - 1$					
5921 = 31.191	2	383, 63	(2, 1)	383	25
$x^5 - 9980950407x^4 - 137624905461643681x^3 - 111955750364981117x^2 - 1110203770x - 1$					
5921 = 31.191	2	383, 63	(3, 1)	383	25
$x^5 + 107741952500x^4 + 37857012522x^3 - 40750169269x^2 + 142395622x - 1$					
5921 = 31.191	2	383, 63	(4, 1)	383	25
$x^5 + 13431359661124868630519605042119x^4 - 40045233481472048212858011181636178820576317578x^3 + 284819964574405216794978379026467962335418x^2 - 65151846558067165913079x - 1$					
5951 = 11.541	2	1624, 67	(1, 1)	1624	25
$x^5 + 9784454303769781526491x^4 + 4021284675773976150652184624944042x^3 + 309607216566743471278350662x^2 + 403427046504821x - 1$					
5951 = 11.541	2	1624, 67	(2, 1)	1624	25
$x^5 - 29162610x^4 - 4753970406x^3 - 4280773415x^2 - 260384918x - 1$					
5951 = 11.541	2	1624, 67	(3, 1)	1624	25
$x^5 - 21228970131604x^4 - 4451873800125950861234339x^3 + 63383209486147394781336965x^2 - 82743938648846128403x - 1$					
5951 = 11.541	2	1624, 67	(4, 1)	1624	25
$x^5 - 228696533993x^4 - 456273339469671x^3 + 14132089452640x^2 + 191735591441x - 1$					
5981	1	3	1	3	1
6011	1	2	1	2	1
6025 = 25.241	2	242, 51	(1, 1)	242	5
$x^5 + 814818665480x^4 + 82904685991050072995x^3 - 30747934750869964250x^2 + 25604097690x - 1$					
6025 = 25.241	2	242, 51	(2, 1)	242	5
$x^5 - 292045x^4 + 6617635645x^3 - 26033836271400x^2 - 2185449635x - 1$					
6025 = 25.241	2	242, 51	(3, 1)	242	5
$x^5 + 8903465005x^4 - 1201987574124769080x^3 - 15985769909459970545625x^2 - 261870673685x - 1$					

f	k	$(g_i)_{i=1,\dots,k}$	k -uple	gen	h
$p(x)$					
6025 = 25.241	2	242, 51	(4, 1)	242	5
$x^5 + 100862867682330x^4 - 10189363927276878446455x^3$ $+1408094450459706675175x^2 - 4727852904285x - 1$					
6091	1	7	1	7	1
6101	1	2	1	2	1
6121	1	7	1	7	1
6131	1	2	1	2	1
6151	1	3	1	3	1
6161 = 61.101	2	506, 184	(1, 1)	506	5
$x^5 + 60084263x^4 - 28050741776x^3 + 92072987203x^2$ $-63962905415x - 1$					
6161 = 61.101	2	506, 184	(2, 1)	506	5
$x^5 + 383549085x^4 + 26851656999175184x^3$ $+170595933843787x^2 + 218097717015x - 1$					
6161 = 61.101	2	506, 184	(3, 1)	506	5
$x^5 - 4462358115542232487873x^4$ $+5712618517139129990458617909278x^3 +$ $1979044803109302667860392531138x^2 - 15092187858256756511x - 1$					
6161 = 61.101	2	506, 184	(4, 1)	506	5
$x^5 + 90296319386x^4 + 89666717702616x^3 - 5828610465955x^2$ $-20992718x - 1$					
6191 = 41.151	2	152, 165	(1, 1)	152	5
$x^5 + 52750436471x^4 - 4456061787715565x^3$ $+4451439214535151606x^2 + 748096434919x - 1$					
6191 = 41.151	2	152, 165	(2, 1)	152	5
$x^5 - 9039458129x^4 - 33046346659870599x^3$ $-367699858945604454x^2 + 16175873181 - 1$					
6191 = 41.151	2	152, 165	(3, 1)	152	5
$x^5 - 214292876x^4 - 14615338251105x^3 - 4398999954308x^2$ $+62167448x - 1$					
6191 = 41.151	2	152, 165	(4, 1)	152	5
$x^5 - 534148645035637x^4 - 1648098210672592332765888451x^3$ $+16151434332005677515437803x^2 - 11060963345340x - 1$					
6211	1	2	1	2	1
6221	1	3	1	3	1
6271	1	11	1	11	1

