

討論会記録

Ⅳ 「類数の問題」の部

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こゝでは、問題点として次のような点がある。

1. 類数公式

類数公式、極限公式については、基礎的な文献として

Hasse [8], 本田 [2], Siegel [2], [4], 高木 [1],

[2] など。

他に

(i)  $K \subset F$  の代数体  $K$  の類数  $h_K$  の関係: Brauer [2],

Kuroda [2].

(ii) 類数  $h_K$  の評価: Brauer [1], Newman [1],

Siegel [1].

2. 類数 (またはイデアル類群) については、

information などは、

解説的な文献として

Narkiewicz [2], 横井 [4] 及び

また, 二種の問題, 典型として, Genus Theory として  
Cohn [1], Siegel [4].

(i)  $\Gamma$ -拡大の類数として: Iwasawa [3].

(ii)  $\Gamma$  の階数評価: Roquette-Zassenhaus [1].

(iii) 類数の可除性, 非可除性: Honda [5], Ishida [2],  
Iwasawa [1].

(iv)  $\Gamma$  の可除性 (可除性) の類数と, 代数体の存在. 構成:  
Yamamoto [1].

3.  $\Gamma$  の可除性 (可除性) の類数と, 代数体の決定. 一般.

(i) 類数 1 の二次体の決定: Baker [2], Bundschuh-  
Hock [1], Siegel [3], Stark [2]

(ii) 類数 2 の二次体の決定として, 部分的结果:

Iseki [1], Tatzawa [1], Seminar Note at Stony Brook.

(iii) 類数 1 の二次体の無限存在の予想 (Group  
の予想)

(iv) 円分体  $\mathbb{Q}(\exp \frac{2\pi i}{l})$  ( $l$ : 素数) の類数は  $l > 23$  及び  
 $l > 4$  大きいとして (Siegel の予想): Siegel [4], [5]

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 $1 \leq m < 24000$ .

by Hideo Wada

$h_{i,j} = h(Q(\sqrt{-m}))$ ,  $m = i + 100j$

1	1	14	12	8	20	16	20	34	...	24	51
2	1	4	6	12	16	14	24	...	12	28	53
3	1	5	4	10	2	21	...	14	10	16	54
5	2	8	8	16	...	8	...	24	16	24	55
6	2	6	20	...	16	28	12	24	28	28	57
7	1	3	...	3	16	...	13	6	14	3	58
9	...	6	20	8	16	30	16	10	32	...	59
10	2	12	8	8	16	16	12	32	...	16	61
11	1	8	3	19	6	14	10	...	7	31	62
13	2	8	8	8	20	...	10	24	12	12	63
14	4	8	6	26	...	16	34	24	12	36	65
15	2	2	14	...	10	6	20	4	30	8	66
17	4	...	8	10	12	12	12	16	12	20	67
18	...	6	10	12	8	16	12	12	28	...	69
19	1	10	4	10	9	18	5	31	...	19	70
21	4	...	16	20	10	32	...	16	30	20	71
22	2	10	12	8	10	...	12	...	20	18	73
23	3	2	7	4	...	5	22	4	9	10	74
26	6	...	8	22	24	12	36	...	12	40	77
27	...	5	5	12	2	18	4	13	7	...	78
29	6	12	10	24	16	...	36	...	22	36	79
30	4	4	4	8	12	28	...	12	20	24	81
31	3	5	12	3	...	13	13	12	28	...	82
33	4	4	12	...	12	12	20	14	...	16	83
34	4	14	...	12	24	20	14	40	16	26	85
35	2	...	2	18	4	14	10	...	6	28	86
37	2	8	12	8	20	12	...	20	...	20	87
38	6	8	8	...	8	10	20	...	14	16	89
39	4	3	15	6	15	...	...	5	33	8	90
41	8	8	12	28	...	10	28	24	...	46	91
42	4	4	...	...	8	24	16	8	26	12	93
43	1	10	...	...	5	12	3	21	6	16	94
45	...	8	...	8	8	32	16	16	...	...	95
46	4	16	12	10	32	24	16	26	...	16	97
47	5	...	6	5	14	3	23	...	...	5	98
49	...	14	12	14	20	...	20	32	28	12	99
	0	2	7	...	6	26	8	15	10	26	
		6	...	4	12	8	14	12	10	32	
	...	4	4	16	14	22	28	20	44	...	
	4	4	4	4	20	4	12	12	...	4	
	4	4	6	16	8	18	...	10	32	16	
	2	8	8	8	26	...	8	22	16	16	
	3	10	4	19	...	16	11	24	7	36	
	6	16	...	...	30	16	18	40	24	...	
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	...	1	13	...	7	9	16	4	21	...	
	8	8	8	20	16	12	24	...	16	44	
	8	10	20	12	8	30	...	24	44	24	
	1	11	2	9	...	...	4	22	...	11	
	8	...	22	...	16	32	12	20	32	24	
	4	12	...	12	20	16	12	32	16	12	
	7	...	11	8	16	5	30	6	22	15	
	4	14	8	10	12	16	12	26	...	12	
	10	12	12	28	20	16	24	...	20	36	
	8	4	6	16	...	8	30	16	10	20	
	4	8	14	...	8	...	20	14	20	24	
	5	5	5	...	...	8	18	10	22	8	
	...	10	20	20	16	28	20	20	40	...	
	4	12	8	8	20	16	12	24	...	10	
	3	8	3	17	4	8	5	...	3	27	
	4	16	16	8	20	...	12	16	24	24	
	10	12	12	20	...	18	...	16	18	44	
	6	2	14	...	7	7	12	5	29	8	
	12	...	...	22	20	16	40	32	16	36	
	...	4	20	...	20	20	16	16	24	...	
	2	13	4	14	9	22	5	...	...	17	
	4	4	18	12	12	24	...	8	28	12	
	8	20	...	10	28	...	10	42	28	16	
	8	4	8	8	...	4	24	4	16	8	
	4	10	...	6	24	12	8	30	16	14	
	...	...	9	6	20	8	26	16	12	26	
	...	...	8	8	3	25	10	16	14	...	





1	48	20	21	22	23	24	25	26	27	28	29	51
2	16	26	20	64	48	...	56	...	48	60	52	51
3	9	34	5	...	...	40	...	26	48	24	18	53
5	32	48	...	...	...	...	21	20	28	9	59	54
6	48	...	...	...	...	...	40	16	72	48	24	55
7	...	...	...	...	...	...	20	60	32	36	66	57
9	...	...	...	...	...	...	14	28	7	52	...	58
10	32	28	...	...	...	...	28	84	...	...	70	59
11	7	49	...	...	...	...	...	...	24	40	40	61
13	16	16	...	...	...	...	...	8	53	16	42	62
14	36	56	...	...	...	...	24	24	24	60	28	63
15	52	...	...	...	...	...	40	46	80	20	24	65
17	12	...	...	...	...	...	6	46	8	22	24	66
18	28	20	...	...	...	...	24	32	32	...	22	67
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	44	58	...	72	166	128	96	184	144	92
	70	208	...	72	112	64	160	88	52	108
	140	...	72	112	96	64	160	88	30	178
	...	26	160	40	73	69	84	30	...	90
	...	80	40	126	100	...	136	...	64	90
	132	80	228	116	80	126	...	128	200	132
	...	40	96	...	74	132	72	56	120	100
	48	74	128	...	44	130	80	72	136	60
	74	128	...	44	130	80	72	136	60	51
	117	...	92	81	112	24	162	36	94	96
	120	162	132	110	...	80	84	140	...	96
	120	48	48	152	48	96	108	...	46	112
	20	57	36	72	21	99	...	46	42	100
	128	112	64	96	...	80	168	128	72	152
	92	84	126	...	88	144	120	76	228	112
	83	36	...	15	144	24	81	50	92	16
	...	84	156	136	84	132	108	96	172	...
	56	136	96	56	108	96	80	100	...	96
	56	112	42	109	56	100	52	...	25	199
	52	136	96	72	120	...	36	72	96	60
	178	96	60	144	...	72	204	112	...	196
	128	16	164	...	68	40	72	28	132	32
	...	...	56	120	72	50	124	80	48	150
	...	44	104	64	82	136	...	52	94	...
	26	162	32	98	52	148	25	202	...	52

	200	201	202	203	204	205	206	207	208	209
1	96	74	184	112	128	224	...	80	168	140
2	48	...	64	60	...	62	116	72	56	...
3	32	98	20	156	...	68	28	48	24	105
5	80	104	...	96	96	72	192	64	80	80
6	224	...	76	232	80	82	240	128	76	178
7	...	27	...	24	41	29	66	15	155	...
9	208	108	112	144	124	90	168	...	116	160
10	96	116	88	96	64	192	...	88	152	80
11	37	...	42	56	79	...	31	174	32	68
13	56	48	104	...	60	128	108	72	100	68
14	60	224	...	104	140	128	108	134	156	120
15	126	...	104	32	124	36	144	32	52	48
17	80	106	72	64	104	88	48	70	...	48
18	116	64	56	80	96	50	...	...	64	150
19	52	72	61	152	30	...	...	127	48	136
21	170	168	68	104	...	84	236	132	76	236
22	64	42	120	...	74	116	88	52	116	72
23	53	43	...	23	106	44	54	60	112	...
26	96	140	128	98	180	88	60	212	...	112
27	42	88	14	123	24	62	59	...	18	102
29	86	180	176	80	192	...	...	124	120	132
30	188	112	...	128	...	76	156	112	100	144
31	76	32	183	...	77	...	...	35	190	42
33	144	...	56	138	...	58	80	64	44	...
34	...	62	132	148	72	214	136	96	152	...
35	18	146	32	...	52	...	26	104	...	92
37	76	56	...	52	48	164	...	64	112	72
38	52	118	84	68	160	...	48	112	112	...
39	204	...	86	...	...	32	179	48	68	51
41	...	148	...	110	120	120	96	200	92	76
42	84	...	76	128	56	40	164	80	88	148
43	...	53	44	52	23	141	32	43	38	...
45	144	80	72	192	128	72	112	...	80	112
46	88	104	156	108	120	116	...	88	168	136
47	79	37	100	25	104	...	62	43	60	21
49	88	130	208	...	...	166	140	62	188	112

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	200	201	202	203	204	205	206	207	208	209
1	55	...	32	158	36	93	36	142	44	188
2	72	136	72	48	116	64	92	140	...	56
3	136	136	80	192	112	108	176	...	...	190
5	120	16	140	24	60	52	...	20	164	24
6	96	48	80	138	...	68	136	64	52	140
7	84	80	128	...	60	124	64	68	174	56
9	28	212	...	109	82	104	24	153	40	89
10	...	76	182	152	80	192	96	104	172	...
11	48	144	72	86	108	96	46	92	...	56
13	131	32	58	36	52	13	127	...	58	51
14	56	136	80	60	120	...	56	212	96	72
15	160	120	78	176	...	112	174	108	112	116
17	26	56	32	...	26	106	...	70	40	64
18	176	...	66	192	92	116	...	112	76	160
19	...	76	196	96	56	...	96	80	108	...
21	77	60	116	30	206	38	114	41	...	30
22	60	70	88	72	68	100	...	54	124	76
23	114	168	72	88	160	...	120	208	...	84
26	56	160	...	48	114	...	64	88	112	52
27	108	...	46	120	100	60	...	68	48	152
29	...	30	194	32	75	72	104	30	183	...
30	252	...	80	172	164	76	152	...	88	110
31	96	46	110	96	...	112	...	68	84	88
33	20	75	30	76	29	...	20	124	20	69
34	80	56	164	...	72	136	80	64	132	96
35	...	214	...	68	130	112	92	232	...	96
37	62	...	49	44	104	20	136	...	65	42
38	84	108	116	110	216	120	56	246	...	96
39	...	72	76	168	96	64	188	...	56	124
41	32	102	74	120	24	186	...	80	78	156
42	156	120	48	112	...	52	130	80	60	96
43	128	88	188	...	100	128	100	60	240	112
45	80	44	...	16	160	28	72	40	120	24
46	...	40	140	96	56	108	108	76	104	...
47	52	158	72	64	108	64	56	96	...	78
49	58	100	26	145	38	117	74	...	23	208

1	72	138	104	212	213	214	215	216	217	218	219	210	211	212	213	214	215	216	217	218	219
2	74	76	68	118	...	80	158	...	80	158	...	51	58	80	120	38	214	28	67	39	...
3	30	70	48	...	...	84	128	60	68	136	...	84	72	36	148	112	48	96	...	...	128
5	192	...	56	112	...	16	24	56	51	...	...	...	96	206	84	96	140	...	120	...	88
6	...	84	208	128	72	128	64	192	...	...	...	84	52	88	23	132	...	72	64	56	28
7	58	25	92	20	131	36	68	...	...	...	...	60	74	120	...	44	114	92	58	132	96
9	128	72	120	120	72	196	...	...	...	...	...	36	76	...	68	140	116	...	128	64	82
10	88	152	80	68	108	...	...	64	208	120	56	122	240	38	172	40	99	...	138	25	168
11	45	164	19	200	...	...	63	140	36	165	...	154	56	76	120	...	50	120	...	...	68
13	74	116	...	80	...	...	64	42	168	80	64	64	23	118	26	...	33	...	20	133	24
14	168	...	72	240	104	100	204	112	76	186	...	136	96	80	132	...	80	120	104	72	128
15	...	32	190	...	...	54	36	128	16	206	...	124	108	...	...	82	224	112	122	...	160
17	172	92	...	142	...	...	54	116	...	56	144	67	132	...	56	57	96	18	75	32	54
18	72	64	...	80	...	...	54	160	...	42	130	69	60	270	176	120	136	88	92	124	...
19	23	...	40	91	69	...	...	32	198	48	94	...	96	88	100	112	144	80	112	...	...
21	...	84	150	...	...	80	168	116	80	174	108	71	156	48	130	64	96	32	196	...	62
22	48	176	...	56	...	84	80	68	142	68	80	73	80	120	72	48	120	...	44	154	56
23	87	...	54	25	112	25	132	20	66	34	...	74	136	192	72	184	...	80	142	88	182
26	168	112	94	172	120	92	164	...	120	144	...	77	88	...	46	140	52	144	96	44	108
27	32	44	49	66	28	28	124	...	95	40	72	78	...	62	112	72	54	98	84	56	182
29	192	124	128	144	...	...	92	176	100	80	256	79	88	49	124	21	228	54	80	66	...
30	80	60	144	...	...	76	148	96	56	176	144	81	92	132	160	152	84	228	...	72	224
31	121	68	...	34	122	48	74	72	152	36	...	82	92	96	96	54	140	...	60	126	60
33	...	72	112	64	64	76	96	124	60	104	...	83	58	72	19	139	...	46	45	68	20
34	96	156	120	94	220	104	84	202	...	16	104	85	60	152	...	64	148	84	120	96	112
35	44	92	20	168	60	104	...	62	...	96	60	86	164	...	76	...	148	80	152	132	248
37	164	104	64	84	...	...	64	96	96	60	60	87	...	19	118	20	41	37	90	25	148
38	94	37	140	...	...	...	...	72	72	52	128	89	272	112	64	176	176	102	...	...	96
39	200	...	132	158	136	84	176	96	120	256	...	90	112	64	192	128	88	104	...	76	136
41	...	...	112	100	40	134	84	56	88	...	...	91	20	145	36	87	45	...	42	184	28
42	...	...	111	32	68	24	68	26	104	...	67	93	72	68	180	...	82	120	96	56	90
43	18	111	56	112	72	72	208	...	96	168	96	94	88	...	80	72	160	144	112	160	136
45	128	76	208	116	92	250	...	72	208	160	66	95	144	...	88	90	96	64	48	124	...
46	76	208	116	92	250	...	...	72	208	160	66	97	...	104	88	90	96	64	48	124	...
47	142	32	47	...	...	14	123	24	54	48	48	98	...	60	56	120	68	72	168	...	62
49	96	150	...	116	144	120	124	208	124	68	68	99	32	...	108	25	179	...	69	58	164

1	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
2	80	144	116	212	144	102	240	144	148	150	51	29	222	48	104	48	110	41	147	112
3	15	60	116	...	56	102	80	44	148	96	53	100	80	...	60	66	100	...	64	186
5	...	...	...	43	54	88	20	108	24	80	54	90	176	84	136	180	...	64	208	128
6	134	136	116	80	216	...	120	228	192	...	55	160	32	68	36	...	20	188	40	76
7	152	24	78	57	72	18	116	...	37	51	57	64	98	...	80	120	88	68	100	96
9	72	266	120	72	200	...	96	114	108	132	59	...	65	79	132	42	208	40	92	53
10	160	96	84	120	...	68	128	80	72	200	61	164	144	100	180	168	104	104	...	172
11	40	79	64	...	30	189	48	126	71	88	62	148	64	114	68	60	76	...	80	96
13	150	...	48	96	120	56	114	80	72	108	63	73	36	100	32	114	...	50	32	60
14	...	72	224	144	72	152	104	136	208	...	65	96	80	144	...	64	108	112	72	192
15	64	38	92	26	158	32	70	56	...	30	66	64	166	...	68	216	132	80	204	104
17	80	56	176	80	64	184	...	50	92	84	67	45	...	18	69	20	91	30	122	24
18	84	174	...	52	96	...	56	108	112	60	69	72	200	96	68	202	124	130	204	...
19	64	124	28	204	...	96	53	84	36	168	70	156	64	112	196	128	48	132	...	68
21	...	140	...	128	184	92	66	264	96	96	71	120	23	191	50	70	87	...	26	177
22	...	...	48	152	72	50	152	72	66	116	73	128	64	60	132	...	54	144	60	48
23	...	27	148	24	58	40	130	20	120	...	74	176	72	192	...	64	252	112	88	178
26	88	104	176	...	126	176	...	68	172	108	77	...	60	130	84	...	100	96	84	130
27	21	128	32	50	30	...	151	40	44	...	78	64	100	80	60	116	112	72	116	...
29	88	84	150	...	84	232	192	80	184	108	79	165	48	113	44	104	22	217	...	124
30	60	196	...	80	132	88	88	116	120	84	81	96	216	160	98	180	...	80	240	152
31	183	...	96	46	140	23	172	34	...	84	82	76	104	48	...	...	84	120	52	64
33	60	130	84	60	108	80	56	120	...	48	83	32	70	47	...	21	90	28	69	...
34	240	128	78	124	144	96	210	...	...	146	85	168	...	84	...	72	120	168	...	48
35	40	64	42	120	32	114	...	66	42	136	86	...	126	252	96	90	136	112	60	230
37	82	80	64	168	...	48	186	64	68	128	87	60	40	72	20	150	22	...	35	...
38	64	70	184	...	68	168	...	60	132	68	89	88	126	128	136	124	...	...	108	200
39	127	...	...	24	198	48	55	75	136	24	...	...	136	64	64	208	...	76	144	144
41	...	60	120	96	100	162	116	106	168	...	91	79	112	27	203	...	108	51	152	26
42	56	112	96	62	...	...	64	116	...	80	93	42	140	...	...	112	88	72	120	80
43	36	...	16	171	18	67	55	...	16	107	94	164	...	112	170	128	112	208	96	84
45	64	120	96	48	...	...	96	168	80	96	95	...	36	...	64	64	104	104	28	160
46	176	88	...	190	...	132	...	168	128	240	97	140	...	52	86	100	60	148	...	80
47	66	27	89	...	95	32	80	...	136	18	98	104	44	106	108	48	90	...	100	132
49	224	...	124	206	104	86	144	120	72	200	99	...	120	38	90	66	...	45	216	64

1	230	231	232	233	234	235	236	237	238	239	230	231	232	233	234	235	236	237	238	239
2	160	72	292	...	112	124	92	120	204	136	51	68	92	29	198	50	102	82	...	28
3	56	104	...	52	102	100	72	156	76	56	53	66	...	112	...	...	48	96	...	60
4	43	...	19	108	28	70	47	58	30	156	54	180	160	96	170	...	150	112	...	132
5	80	136	128	80	128	120	72	160	...	72	55	88	32	108	...	52	88	28	...	196
6	136	168	104	284	96	96	160	...	120	148	57	104	...	64	142	80	112	120	...	40
7	100	24	126	24	72	36	...	30	116	24	58	...	46	104	60	138	108	72	...	128
8	216	96	116	256	...	94	212	96	64	154	59	29	171	36	104	59	134	150	...	...
9	80	80	160	...	100	104	96	52	172	128	61	164	104	196	112	92	204	...	104	228
10	35	...	...	97	78	140	34	206	30	131	62	64	172	68	76	190	...	44	...	72
11	...	72	92	88	60	176	88	72	150	...	63	161	36	52	30	...	17	183	...	34
12	124	184	136	64	224	100	120	216	...	68	65	88	144	...	84	...	88	96	...	60
13	138	24	78	62	80	26	126	...	80	50	66	176	...	88	228	96	92	180	...	142
14	60	178	112	52	100	...	88	96	120	70	67	...	57	52	64	18	111	...	57	50
15	84	100	88	88	...	68	...	72	42	140	69	144	148	86	196	160	...	198	...	122
16	66	124	48	...	26	184	...	87	81	128	70	96	64	120	80	92	180	...	100	160
17	190	...	88	168	160	84	192	148	104	204	71	105	52	174	37	...	...	71	64	96
18	...	64	148	...	...	88	64	68	116	...	73	60	66	...	...	56	140	96	66	136
19	64	32	68	26	94	26	53	44	...	18	74	96	158	...	96	...	108	104	168	96
20	116	224	...	92	192	...	66	268	...	72	77	80	...	68	64	160	56	98	136	60
21	39	60	21	153	...	56	37	80	21	122	78	168	72	72	156	80	62	96	...	58
22	74	192	...	96	240	128	78	248	...	88	79	...	30	141	46	94	80	...	40	135
23	...	...	72	124	80	72	192	96	60	116	81	112	88	88	132	...	142	144	164	72
24	...	27	234	40	71	53	158	26	177	...	82	84	68	152	...	60	140	112	80	122
25	192	96	48	110	56	56	96	...	84	104	83	14	170	...	100	44	104	18	82	36
26	96	92	160	136	90	...	...	114	232	132	85	...	56	132	128	64	128	80	64	128
27	24	172	24	60	64	...	36	192	32	82	86	80	124	140	96	160	176	88	148	...
28	72	64	108	...	60	136	84	64	...	64	87	121	32	84	36	66	16	161	...	83
29	48	136	...	72	100	48	96	112	112	80	89	100	226	136	64	108	...	120	242	140
30	165	...	114	69	144	43	200	28	108	62	90	108	128	56	188	...	72	176	96	68
31	72	280	96	112	220	128	72	198	...	64	91	56	84	47	...	186	36	110	80	96
32	168	64	46	108	112	60	106	...	72	130	93	120	...	70	120	72	56	128	80	66
33	32	61	52	88	20	128	...	65	40	120	94	...	110	228	120	100	224	112	60	256
34	128	104	120	160	...	48	152	104	96	184	95	64	56	124	16	196	...	76	32	...
35	112	92	164	...	72	252	160	72	126	136	97	84	62	124	112	72	152	...	40	160
36	64	34	...	18	123	40	48	49	110	20	98	74	112	80	46	184	...	...	140	104
37	...	84	180	128	124	170	180	96	160	...	99	85	104	32	229	...	65	52	168	27

The Table of  
Ideal groups of  $Q(\sqrt{-m})$ ,  $0 < m < 24000$ , which are not trivial groups.

Let  $t$  be the number of ramified primes at  $Q(\sqrt{-m})/Q$ . Then  
'trivial group' means

- 1) cyclic, when  $t=1$  or 2,
- 2) of  $(a, 2, 2, \dots, 2)$  type, when  $t \geq 3$ .

In this table, 'a\*b\*c' means a group of  $(a, b, c)$  type. The  
first number  $m$ , such that the ideal group of  $Q(\sqrt{-m})$  is not trivial  
group, is 974.

m	G	m	G	m	G	m	G
974	12*3	5703	18*3	10549	8*4*2	13143	16*4
1513	4*4	5795	8*4	10605	4*4*2*2	13317	8*4*2
1582	4*4	5857	12*3	10718	16*4	13342	12*4
1590	4*4*2	5910	4*4*2	10759	12*4	13359	24*4
1598	8*4	5986	8*4	10790	12*4*2	13398	4*4*2*2
1886	16*4	6001	8*4	10798	12*3	13677	8*4*2
1918	4*4	6014	24*4	10803	4*4	13678	8*4
2329	8*4	6085	6*6	10961	32*4	13727	28*4
2379	4*4	6123	4*4	11001	6*6*2	13817	28*4
2437	6*3	6221	42*3	11199	20*5	13829	54*3
2542	4*4	6226	12*6	11326	24*4	13906	16*4
2702	12*4	6286	12*4	11534	44*4	14033	36*3
2993	12*4	6355	4*4	11651	18*3	14062	12*4
3026	12*4	6398	16*4	11713	4*4*2	14126	36*4
3262	8*4	6402	4*4*2	11822	20*4	14155	4*4
3299	9*3	6494	24*4	11966	32*4	14162	20*4
3358	8*4	6497	8*8	12002	20*4	14334	18*6
3502	4*4	6583	12*3	12013	6*6	14446	20*4
3886	6*6	6690	6*6*2	12067	6*3	14462	24*4
3934	8*4	6789	6*6*2	12095	32*4	14473	12*4
4027	3*3	6910	6*6	12118	6*6	14547	4*4
4318	8*4	6914	36*3	12131	12*3	14606	10*10
4369	12*4	6953	16*4	12206	48*4	14637	4*4*2*2
4486	10*5	7006	20*4	12207	20*4	14722	8*4
4633	8*4	7059	8*4	12282	6*6*2	14730	6*6*2
4658	16*4	7081	16*4	12394	18*3	14795	8*4
4718	16*4	7361	28*4	12451	5*5	15049	12*6
4777	8*4	7582	8*4	12453	6*6*2	15326	48*4
4810	4*4*2	7585	4*4*2	12481	12*6	15389	20*10
4895	16*4	7769	24*4	12505	8*4*2	15538	16*4
5037	4*4*2	7966	8*8	12595	4*4	15549	12*4*2
5069	12*6	7977	6*6	12638	32*4	15655	24*4
5134	16*4	8103	12*4	12710	16*4*2	15658	10*5
5142	6*6	8126	40*4	12837	6*6*2	15742	16*4
5190	8*4*2	8242	6*6	12937	8*4	15805	8*4*2
5306	12*6	8322	8*4*2	12994	12*4	15806	44*4
5417	24*3	8366	28*4	13022	16*4	15910	8*4*2
5614	8*4	8446	12*4	13073	16*4	15929	32*4



m G  
 23439 36\*4  
 23585 16\*4\*2  
 23605 12\*6  
 23683 6\*3  
 23862 6\*6\*2  
 23871 24\*4  
 23910 8\*8\*2  
 23953 24\*4

m G  
 21098 16\*4\*2  
 21190 8\*4\*2  
 21233 28\*4  
 21243 8\*4  
 21395 16\*4  
 21418 18\*3  
 21449 24\*6  
 21454 24\*4  
 21571 8\*4  
 21605 24\*4\*2  
 21755 16\*4  
 21895 24\*4  
 21922 20\*4  
 21930 6\*6\*2\*2  
 21998 20\*4  
 22055 40\*4  
 22127 16\*8  
 22222 12\*4  
 22321 8\*8\*2  
 22395 6\*6  
 22443 6\*3  
 22481 60\*3  
 22654 16\*4  
 22711 42\*3  
 22717 10\*5  
 22763 8\*4  
 22862 12\*4\*2  
 22873 12\*4  
 22965 12\*6\*2  
 23095 16\*4  
 23137 16\*4  
 23142 4\*4\*2\*2  
 23155 8\*4  
 23165 12\*6\*2  
 23178 12\*6  
 23190 16\*4\*2  
 23329 24\*4  
 23377 16\*4

m G  
 18458 18\*6  
 18542 28\*4  
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 18649 16\*4  
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 18761 32\*4  
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 18922 10\*5  
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 19346 44\*4  
 19427 9\*3  
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 19590 12\*4\*2  
 19618 12\*4  
 19651 6\*3  
 19677 6\*6\*2  
 19679 54\*3  
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 19762 8\*8  
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 19981 12\*4\*2  
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 20737 16\*4  
 21018 6\*6\*2

m G  
 15934 16\*4  
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 16238 12\*12  
 16301 78\*3  
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 16582 10\*5  
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 18278 12\*4\*2  
 18285 4\*4\*2\*2  
 18286 16\*4  
 18362 30\*3  
 18409 28\*4