27. *Tables of Ideal Class Groups of Purely Cubic Fields*

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1. Introduction. A table of fundamental units of purely cubic fields $\boldsymbol{Q}(\sqrt[3]{m})$ for $1<m<250$ was given in [1]. In this note we shall give two tables of ideal class groups of $\boldsymbol{Q}(\sqrt[3]{m})$ for $1<m<1002$.

We use the expression $(a, b, \cdots, c)$ to denote the type of finite abelian group which is the direct product of cyclic groups of order $a, b, \cdots, c$ $a\boldsymbol{Z} \subset b\boldsymbol{Z} \subset \cdots \subset c\boldsymbol{Z}$. The method of our calculation is based on [2] chapter 4. It was done by micro computer PC-386 and PC-9801DA. The program was written in U-BASIC.

2. Tables. Table 1 contains ideal class numbers h of $\boldsymbol{Q}(\sqrt[3]{m})$ for $1<m<1002$ whose ideal class groups are cyclic. There are 202 non-cyclic ideal class groups in this range which are listed in Table 2.

References

[1] H. Wada: A table of fundamental units of purely cubic fields. Proc. Japan Acad., **46**, 1135–1140 (1970).
[2] ——: Application of computer to number theory. Sophia Kokyuroku in Mathematics, **7** (1980) (in Japanese).

Table 1

m	h	m	h	m	h	m	h	m	h	m	h
2	1	71	1	150	3	227	1	309	3	391	12
3	1	73	3	151	6	229	24	311	5	393	2
5	1	74	3	153	9	233	4	313	3	394	3
6	1	76	6	154	3	234	6	314	3	395	3
7	3	77	3	155	6	235	7	315	3	396	3
10	1	78	3	156	3	236	6	316	6	397	3
11	2	79	6	157	3	237	3	317	1	398	6
12	1	82	1	158	3	239	1	318	3	401	1
13	3	83	2	159	3	241	3	319	3	404	1
14	3	84	3	161	3	244	3	321	9	406	3
15	2	85	3	163	3	246	3	323	3	409	6
17	1	87	1	164	6	249	2	325	3	411	1
19	3	89	2	165	9	251	1	326	3	412	6
20	3	90	3	166	6	252	6	327	12	413	3
21	3	92	3	167	1	253	1	329	6	414	6
22	3	93	3	170	3	255	3	331	6	415	1
23	1	94	3	171	6	257	1	332	1	417	3
26	3	95	3	172	3	258	3	333	3	419	1
28	3	97	3	173	1	260	3	334	1	421	12
29	1	99	1	175	3	261	1	337	6	422	21
30	3	101	2	177	1	262	1	339	1	423	7
31	3	102	3	178	3	263	5	341	3	425	6
33	1	103	3	179	1	265	6	345	3	426	3
34	3	105	6	181	3	267	15	347	2	428	3
35	3	106	6	183	3	268	6	348	3	429	3
37	3	107	1	185	6	269	7	349	3	431	4
38	3	109	3	186	6	271	9	350	3	433	6
39	6	111	3	187	3	274	6	353	2	435	3
41	1	114	3	188	1	275	3	354	3	437	6
42	3	115	3	190	3	276	3	355	6	438	3
43	12	116	1	191	2	277	12	356	6	439	15
44	1	117	3	193	3	278	3	357	6	442	3
45	1	118	2	194	3	279	3	358	3	444	3
46	1	119	3	195	6	281	22	359	4	445	12
47	2	122	12	197	1	282	3	365	6	447	1
51	3	123	2	198	6	283	3	366	6	449	2
52	3	127	3	199	9	284	3	367	3	451	1
53	1	129	6	201	3	285	15	369	4	452	3
55	1	131	2	202	3	287	3	371	6	453	3
57	6	132	3	204	12	291	6	372	3	454	3
58	6	134	3	205	3	292	3	373	6	457	3
59	1	137	1	206	3	293	2	377	3	458	6
60	3	138	3	207	8	295	12	379	3	460	3
61	6	139	6	211	6	298	1	381	12	461	1
62	3	142	6	212	6	299	6	382	3	463	6
63	6	143	3	213	21	302	3	383	2	465	24
66	6	145	1	215	21	303	10	386	3	466	3
67	6	146	3	221	3	305	21	387	3	467	1
68	3	148	6	223	6	306	3	388	3	471	6
69	1	149	2	226	1	307	6	389	8	475	3

Table 1 (continued)

m	h	m	h	m	h	m	h	m	h	m	h
476	3	562	6	652	12	748	3	833	3	933	2
477	9	563	2	653	2	749	3	834	6	934	24
478	1	564	9	654	6	751	3	835	3	935	3
479	1	565	6	655	3	753	12	836	3	937	3
482	3	566	6	661	3	755	42	838	1	939	3
483	12	569	1	663	3	757	3	839	1	941	2
485	3	573	1	666	6	758	6	842	6	942	12
487	18	575	1	667	19	759	21	843	5	943	15
489	3	577	15	668	3	761	20	844	3	947	2
491	1	579	6	669	6	762	6	846	3	948	3
492	6	583	3	673	6	764	1	849	6	951	1
493	3	585	3	674	3	765	3	852	3	953	1
495	9	586	2	677	2	766	1	853	3	954	6
498	3	587	2	678	18	767	6	859	6	955	1
499	12	591	3	683	1	769	3	861	6	956	3
501	1	593	2	684	6	771	1	862	3	957	3
502	6	595	6	685	1	772	3	863	1	958	3
503	4	596	3	687	15	773	1	865	1	959	3
505	7	597	3	691	3	774	3	869	3	963	3
509	28	599	2	692	1	775	6	876	12	964	6
514	14	601	6	693	3	778	3	877	6	965	48
515	42	603	6	694	1	779	3	879	7	967	3
517	3	604	3	695	3	781	9	881	1	971	1
519	2	606	15	697	9	782	3	883	3	974	3
521	1	607	3	698	3	785	48	885	6	975	15
522	3	609	3	699	3	786	6	886	3	977	1
523	9	611	3	701	2	787	3	887	2	979	6
524	30	612	6	705	3	788	3	890	3	981	3
526	3	613	3	707	3	789	1	892	6	982	1
527	6	615	6	708	6	791	3	893	3	983	1
530	3	617	1	709	6	795	6	894	3	985	72
531	1	619	15	710	3	796	3	895	36	987	3
533	3	620	3	711	3	797	2	898	18	989	3
534	3	622	1	716	6	799	9	899	6	991	3
535	18	623	3	717	5	801	6	901	6	993	3
538	3	626	12	718	18	802	1	906	12	996	36
539	3	627	12	719	1	803	6	907	3	998	21
541	9	629	3	723	6	807	9	908	1		
542	6	631	3	724	3	809	1	909	2		
543	3	633	12	725	3	811	15	911	2		
545	3	634	3	727	12	818	3	913	3		
547	3	636	3	731	3	820	3	917	3		
548	1	638	3	733	6	821	1	919	9		
549	3	639	18	735	3	822	6	922	24		
550	3	641	1	737	3	823	3	923	3		
551	3	642	6	738	12	825	3	925	30		
555	3	643	24	739	21	827	1	926	3		
556	6	645	6	743	4	828	6	927	12		
557	2	647	1	746	3	829	3	929	1		
558	6	649	1	747	1	831	6	932	6		

Table 2

m	group	m	group	m	group	m	group	m	group
65	(6,3)	342	(9,3)	537	(6,2)	703	(9,3)	868	(6,3)
70	(3,3)	346	(12,2)	546	(6,3)	706	(12,2)	870	(9,3)
86	(3,3)	362	(6,2)	553	(3,3)	713	(6,6)	871	(6,3)
91	(3,3)	364	(6,3)	554	(3,3)	714	(6,3)	873	(6,2)
110	(3,3)	370	(3,3)	559	(3,3)	715	(3,3)	874	(3,3)
113	(2,2)	374	(3,3)	561	(24,2)	721	(9,3)	878	(6,3)
124	(3,3)	380	(3,3)	570	(6,3)	730	(18,3)	884	(3,3)
126	(3,3)	385	(3,3)	571	(6,2)	732	(6,3)	889	(3,3)
130	(3,3)	390	(3,3)	572	(3,3)	734	(6,2)	897	(6,3)
133	(3,3)	399	(3,3)	574	(6,3)	740	(6,3)	902	(18,3)
140	(3,3)	402	(3,3)	580	(3,3)	741	(12.6)	903	(3,3)
141	(4,2)	403	(3,3)	581	(3,3)	742	(3,3)	905	(6,3)
174	(6,2)	407	(9,3)	582	(12,3)	745	(6,2)	910	(3,3)
182	(3,3,3)	410	(3,3)	589	(3,3)	754	(6,3)	914	(24,3)
203	(3,3)	418	(3,3)	590	(3,3)	763	(15,3)	915	(15,3)
209	(9,3)	420	(3,3)	598	(3,3)	770	(3,3,3)	916	(3,3)
210	(6,3)	427	(6,6)	602	(3,3)	777	(6,6)	921	(3,3)
214	(6,2)	430	(3,3)	610	(6,3)	780	(3,3)	924	(3,3)
217	(9,3)	434	(3,3)	614	(18,3)	790	(3,3)	930	(3,3)
218	(6,3)	436	(3,3)	618	(18,3)	793	(9,3)	931	(6,3)
219	(6,3)	443	(2,2)	628	(6,3)	794	(18,3)	938	(12,3)
220	(3,3)	446	(3,3)	630	(3,3)	798	(3,3)	940	(6,6)
222	(6,3)	455	(3,3)	635	(18,3)	804	(6,2)	946	(6,3)
228	(3,3)	462	(6,3)	637	(3,3)	805	(6,3)	949	(3,3)
230	(3,3)	463	(3,3)	644	(6,3)	806	(6,3)	950	(6,3)
231	(6,3)	469	(3,3)	646	(3,3)	812	(6,3)	962	(3,3)
238	(3,3)	470	(6,3)	650	(3,3)	813	(54,3)	966	(3,3)
247	(3,3)	473	(6,3)	651	(36,3)	814	(3,3)	969	(9,3)
254	(9,3)	474	(3,3)	657	(9,3)	815	(3,3)	970	(30,3)
259	(3,3)	481	(12,3)	658	(3,3)	817	(24,3)	973	(6,3)
266	(3,3)	490	(3,3)	659	(2,2)	819	(3,3)	978	(3,3)
273	(9,3)	494	(3,3)	660	(3,3)	826	(3,3)	986	(3,3)
286	(6,3)	497	(3,3)	662	(6,2)	830	(3,3)	988	(6,3,3)
290	(3,3)	506	(6,6)	665	(6,3)	850	(6,3)	990	(6,3)
301	(3,3)	508	(6,3)	670	(6,3)	851	(9,3)	994	(18,3)
303	(3,3)	510	(6,6)	671	(3,3)	854	(3,3,3)	995	(33,3)
310	(3,3)	511	(36,3)	679	(3,3)	855	(9,3)	997	(30,2)
322	(12,3)	516	(6,2)	681	(8,2)	857	(28,2)	1001	(18,3,3)
330	(3,3)	518	(12,3)	682	(9,3)	858	(3,3)		
335	(3,3)	525	(3,3)	639	(12,3)	860	(3,3)		
340	(3,3)	532	(3,3)	690	(3,3)	866	(9,3)		