

there is only a finite number whose coefficients satisfy a relation

$$F\left(\frac{a_1}{a_n}, \frac{a_2}{a_n}, \dots, \frac{a_{n-1}}{a_n}\right) = k,$$

where  $F$  is a polynomial with positive coefficients and  $k > 0$ ; for  $F$  is a polynomial in the reciprocals of the roots, and, when thus expressed,  $F$  has no constant term, so that the first theorem of this paper applies. We could obtain upper bounds for the roots, and therefore for the  $a$ 's, by the methods of this paper. For example, if  $a_{n-1} = a_n$ , and if  $x_1, x_2, \dots, x_n$  are the roots, the  $x$ 's must be solutions of the equation

$$\frac{1}{x_1} + \frac{1}{x_2} + \dots + \frac{1}{x_n} = 1,$$

which has been discussed in § 2.

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## ERRORS IN KRAITCHIK'S TABLE OF LINEAR FORMS

BY D. H. LEHMER

Tables of the linear forms that belong to a given quadratic residue  $D$ , or in other words, the linear divisors of the quadratic form  $t^2 - Du^2$  were first published by Legendre.\* A list of errors in these fundamental tables has been given by D. N. Lehmer.† Kraitchik‡ has recalculated and extended these tables to the limit  $D = \pm 250$ . It is of great importance in using the table that every entry be correct. Therefore in constructing his factor stencils, D. N. Lehmer found it advisable to make a new table by means of a more or less graphical method.§ This table which has not been pub-

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\* *Théorie des Nombres*, 1st. ed., Tables III-VII, 1798.

† This Bulletin, vol. 8 (1902), p. 401. See also the correction in this Bulletin, vol. 31 (1925), p. 228.

‡ *Théorie des Nombres*, vol. 1, p. 164-186, Paris, 1922. *Recherches sur la Théorie des Nombres*, vol. 1, p. 205-215, Paris, 1924.

§ This Bulletin, vol. 31 (1925), pp. 497-498.

lished extends to  $D = \pm 300$ . The following list of errors results from collating these two tables. Kraitchik's forms for  $D = \pm 182$  contain so many errors that a complete list of correct forms is given below. In as much as there were no errors detected in Lehmer's table it is reasonable to expect that the following list is complete.

ERRORS IN KRAITCHIK'S TABLE OF LINEAR DIVISORS

<i>Théorie des Nombres</i> , vol. 1.			<i>Théorie des Nombres</i> , vol. 1.		
$D$	For	Read	$D$	For	Read
+38	59	53	+157	107	109
-38	116	117	-157	471	529
-42	55	53	+165	112	113
-42	159	157	-166	473	477
+69	55	53	-173	655	309
-86	89	87	+174	203	61
-102	147	145	-181	359	357
-103	67	79	-181	491	461
-103	177	179	-181	719	721
-105	57	67	-185	661	253
-106	73	71	+190	119	197
-107	191	193	+191	173	175
-109	333	103	+191	271	275
-110	39	49	+193	155	129
-110	207	217	-193	541	155
-113	397	171	-193	617	231
+122	195	199	+194	41	47
-138	163	169	-194	453	455
-141	413	415	-197	191	199
+146	77	119	+199	309	257
-146	77	303	-199	309	257
-149	367	365	-199	insert	371
+151	183	189			

  

<i>Recherches</i> , vol. 1.			<i>Recherches</i> , vol. 1.		
$D$	For	Read	$D$	For	Read
+211	287	289	+230	23	33
-217	319	317	-233	915	925
-218	533	535	-241	607	357
+222	99	95	-241	697	693
-222	483	485	-241	731	733
-226	375	373	-246	387	389
-226	385	395	-247	105	449
-226	387	397	-249	197	695
+227	241	261	-249	301	799
-229	197	199			

CORRECT TABLES FOR  $D = \pm 182$ 

	$D = + 182$							$D = - 182$					
$728n \pm$	1	9	15	19	25	33	$728n +$	1	3	9	11	23	25
	37	41	43	51	55	59		27	31	33	37	41	47
	61	69	71	73	81	83		61	67	69	73	75	79
	85	87	89	93	97	101		81	85	89	93	95	97
	103	107	109	113	115	121		99	101	109	111	113	121
	135	141	145	149	151	155		123	127	131	139	141	145
	157	159	171	173	179	181		149	157	163	167	173	181
	187	197	199	201	211	225		183	191	197	201	207	215
	227	233	235	237	239	241		219	223	225	233	237	241
	253	265	269	285	289	297		243	251	253	255	263	265
	307	311	317	319	333	335		267	269	271	275	279	283
	337	341	347	353	359	361		285	289	291	295	297	303
								317	323	327	331	333	337
								339	341	353	355	361	363
								369	379	381	383	393	407
								409	415	417	419	421	423
								435	447	451	467	471	479
								489	493	499	501	515	517
								519	523	529	535	541	543
								549	551	557	563	569	573
								575	577	591	593	599	603
								613	621	625	641	645	657
								669	671	673	675	677	683
								685	699	709	711	713	723

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