The result (d) was another example of the converse of Fermat's theorem. It is easy to see that the 15 integers between the two primes

$$p_1 = 2^{61} - 1 \qquad \text{and} \qquad p_2 = 2^{61} + 15$$

are composite, being multiples of small primes $\leqslant 13$. Hence, p_1 and p_2 are consecutive primes, and constitute the largest pair of consecutive primes known.

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[1] A. J. C. Cunningham & H. J. Woodall, *Factorization of* $y^n \pm 1$, London, 1925.

QUERY

34. Archimides Cattle Problem.—Has any attempt been made to use one of the modern electronic computing devices to get a solution of the famous cattle problem[1] of Archimedes?

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[1] See L. E. Dickson, *History of the Theory of Numbers*, Washington, 1920 and New York, 1934, v. 2, p. 342–345.

QUERIES—REPLIES

44. Tables of sin nx/sin x (Q16, v. 2, p. 61).—A table of this function "for large integral values of n, say up to 100, and for values of x in radians" would be impossibly large if it were interpolable in x. Millions of entries would be necessary to carry the table as far as $x = 10$ with $8D$. Since isolated values of this function can be obtained with a little trouble from a good table of sin x it is not surprising that there is no such table in print. For fixed x, however, there are a number of small tables of what is essentially sin nx/sin x. Two examples may be cited, though they do not correspond to real values of x. For $x = \arccos(-i/2)$ we have

$$\sin nx/\sin x = i^{1-n}F_n,$$

where F_n is the n-th term of the Fibonacci series, which is tabulated as far as $n = 128$ [*MTAC*, v. 2, p. 343]. For $x = \arccos\,(-3i/\sqrt{2})$ we have

$$\sin nx/\sin x = (i\sqrt{2})^{1-n}(2^n - 1)$$

the values of which can be found easily from a table of powers of 2.

As is well known, $U_n = \sin nx/\sin x$ is a special kind of Lucas[1] function and can be computed recurrently by the formula

$$U_{n+1} = 2\cos x U_n - U_{n-1}.$$

D. H. L.

[1] É. Lucas, *Théorie des Nombres*, Paris 1890, p. 319.

CORRIGENDA

V. 3, p. 362, l. -1 *for* RMT **593** *read* RMT **592**.
V. 3, p. 554, l. 3, *for* 4–17, *read* 3–16.
V. 3, p. 559, l. 4, *for* 454 *read* 554.
V. 3, p. 562, l. 30, *for* Nicholas De Cusa *read* Nicholas de Cusa.
V. 3, p. 563, l. 6, *for* fifteenth *read* thirteenth.
Nos. 28, 29, cover 3, interchange lines J and I.