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[^0]167.-Cullen Numbers. These are numbers of the form $n 2^{n}+1$ and are remarkable in that they seem to be composite for $n>1$, although there is no a priori reason for this. Cunningham $\&$ Woodall ${ }^{1}$ made a study of these numbers and found them all composite with a small factor for $1<n<141$. No factor of $141 \cdot 2^{141}+1$ is known. I have completely factored the following cases left incomplete by Cunningham. The case $n=46$ is due to R. A. Liénard of Lyons.

| $n$ | $n 2^{n}+1$ | $n$ | $n 2^{n}+1$ |
| :--- | :--- | :---: | :--- |
| 33 | $47 \cdot 6031230671$ | 42 | $23 \cdot 43 \cdot 83 \cdot 2250270487$ |
| 35 | $37 \cdot 32502455213$ | 43 | $3 \cdot 5 \cdot 163 \cdot 2633 \cdot 58752797$ |
| 37 | $3 \cdot 5 \cdot 339016085231$ | 45 | $11 \cdot 47 \cdot 2437 \cdot 1256655529$ |
| 38 | $3^{2} \cdot 20879 \cdot 55586743$ | 46 | $5 \cdot 31 \cdot 47 \cdot 139297 \cdot 3189821$ |
| 39 | $41 \cdot 3433 \cdot 152326961$ | 47 | $7 \cdot 11 \cdot 43 \cdot 3593 \cdot 556021079$ |
| 40 | $41 \cdot 131611 \cdot 8150491$ | 48 | $7 \cdot 379 \cdot 997 \cdot 5107973329$ |
| 41 | $13 \cdot 43 \cdot 1291 \cdot 124932557$ | 66 | $5^{3} \cdot 13 \cdot 67 \cdot 107 \cdot 131 \cdot 8353 \cdot 382030403$ |

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${ }^{1}$ A. J. C. Cunningham \& H. J. Woodall, "Factorisation of $Q=\left(2^{q} \mp q\right)$ and ( $q \cdot 2^{q} \mp 1$ )," Messenger Math., v. 47, 1917, p. 1-38.

## CORRIGENDA

V. 6, p. 225, 1. 11, for monomial read elementary.
V. 7, p. 34, 1. 6, for 6 read 1.
V. 7, p. 175, 1. 17, for 9 read 8.


[^0]:    ${ }^{1}$ Compare D. H. Lehmer, Guide to tables in the theory of numbers. National Research Council, 1941, p. 75-77, O. TAUSSKy, Some computational problems in algebraic number theory. National Bureau of Standards Report (to appear).
    ${ }_{2}$ For theoretical background consult H. Hasse, Arithmetische Bestimmung von Grundeinheit. Berlin, 1950, p. 70.
    ${ }_{3}$ These were taken from a table of minimum positive $g$ for $p<3000$ in I. M. Vinogradov, Osnovy Teorii Chisel [Fundamentals of the Theory of Numbers]. Moscow, 1940, p. 110.
    ${ }^{4}$ The case $p=163$ was discovered through another procedure by E. Artin, according to a private communication.

