ON THE REPRESENTATION OF LARGE EVEN INTEGERS AS SUMS OF TWO ALMOST PRIMES. II

By

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In a previous paper [3] the writer has given with Miss A. Togashi an elementary proof for the fact that every sufficiently large even integer is representable as a sum of two almost primes, each of which has at most three prime factors, a result first obtained by A. I. Vinogradov. On the other hand, we are able to prove by a rather transcendental method that every large even integer is representable as a sum of a prime and an almost prime composed of at most four prime factors (see [4]). The aim in the present paper is to show that a somewhat weaker result than this can be obtained by an elementary argument. We shall prove the following[1)]

Theorem. *Every sufficiently large even integer N can be written in the form*

$$N = n_1 + n_2 ,$$

where $n_1 > 1$, $n_2 > 1$, $(n_1, n_2) = 1$ *and*

$$V(n_1) + V(n_2) \leqq 5 .$$

In other words, every large even integer N can be represented in the form $N = n_1 + n_2$, where $n_1 > 1$, $n_2 > 1$, $(n_1, n_2) = 1$ and either

$$V(n_1) = 1 , \qquad V(n_2) \leqq 4 ,$$

or

$$V(n_1) \leqq 2 , \qquad V(n_2) \leqq 3 .$$

Our method of proving this result is a refinement of that of proving the previous one, used in [3].

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1) Throughout in this paper, the letters i, j, k, m, n (with or without indices) represent positive integers, while p, q (with or without indices) represent prime numbers. We denote by $V(m)$ the total number of prime divisors of m.