1035-11-1569   **Amitabha Tripathi*** (`atripath@oswego.edu`), Department of Mathematics, SUNY at Oswego, Oswego, NY 13126. *On a linear Diophantine problem of Frobenius in three variables.* Preliminary report.

Given positive integers $a_1, a_2, \ldots, a_k$, with $\gcd(a_1, a_2, \ldots, a_k) = 1$, the *Coin Exchange Problem* of Frobenius asks for the *largest* positive integer N such that the equation

$$a_1 x_1 + a_2 x_2 + \cdots + a_k x_k = N \tag{1}$$

has no solution in nonnegative integers $x_1, x_2, \ldots, x_k$. This number is usually represented by $g(a_1, a_2, \ldots, a_k)$, and it is well known that $g(a_1, a_2) = a_1 a_2 - a_1 - a_2$. There are several results that pertain to the three variable and the more general case, including algorithms and results that apply to special cases.

The purpose of my talk is to present an old and unpublished result that gives a closed-form formula for $g(a_1, a_2, a_3)$. I will also briefly present results for the related problem of determining $n(a_1, a_2, a_3)$, that counts the number of N in (1) that are nonrepresentable by a_1, a_2, a_3. (Received September 20, 2007)

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