

## ANOTHER NOTE ON AN EXPONENTIAL EQUATION

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The hypothesis at the end of *A Note on an Exponential Equation*, that if  $x_0^{k_0} = x_1^{k_1} + x_2^{k_2}$  for  $k_0, k_1$  and  $k_2 > 2$  has an integer solution then  $\gcd(k_0, k_1) = \gcd(k_0, k_2) = 1$ , turns out to be false. Here is a counterexample,  $7^6 + 7^7 = 98^3$ .

However, a similar conjecture was announced in the December 1997 issue of the *Notices of the American Mathematical Society*. Now known as the Beal Conjecture, mainly because of the monetary prize offered by its originator Andrew Beal, states that

**Beal Conjecture** *If  $A^x + B^y = C^z$  where  $x, y$  and  $z > 2$ , has an integer solution, then  $A, B$  and  $C$  must have a common prime divisor.*

Beal offers \$100,000 for the first one to prove or disprove his conjecture.