NUMBER THEORY: CLASS 17

1. Exercise

1) Assume n is a square free number. Show the following:
If $(p-1)|(n-1)$ for every prime factor p of n then n is Carmichael number.

2) Use the converse of the theorem above to show that:
A Carmichael number must be the product of at least 3 distinct primes.

3) Use Maple program to show 1373653 is a strong pseudoprime to the bases 2 and 3.

4) Let $\phi(n)$ be Euler Phi-function.

a) Find all number n where $\phi(n) = \frac{n}{2}$.
b) Find all number n where $\phi(n) = \phi(2n)$.

Date: Friday, October 24, 2008.