Math 290-Number Theory for Teachers
Problem of the Day #10
Due Friday, February 7, 2014

1. We define $\varphi(m)$ to be the number of elements in U_m. Therefore, since U_6 has two elements (namely 1 and 5), $\varphi(6) = 2$. What are $\varphi(2), \varphi(3), \varphi(4), \varphi(5), \varphi(6), \varphi(7), \varphi(8), \varphi(9), \varphi(10)$ and $\varphi(12)$? Any conjectures? What is another way to define $\varphi(m)$? Is $\varphi(ab) = \varphi(a)\varphi(b)$?