TYPE YOUR NAME HERE
HW 16: 3.13-3.17
M328K
March 22th, 2012

3.13 Theorem. *Suppose $f(x) = a_n x^n + a_{n-1}x^{n-1} + \ldots + a_0$ is a polynomial of degree $n > 0$ with integer coefficients. Then $f(x)$ is a composite number for infinitely many integers x.*

Proof. Type your proof here! □

3.14 Theorem. *Given any integer a and any natural number n, there exists a unique integer t in the set $\{0, 1, 2, \ldots, n-1\}$ such that $a \equiv t \pmod{n}$.*

Proof. Type your proof here! □

3.15 Exercise. *Find three complete residue systems modulo 4: the canonical complete residue system, one containing negative numbers, and one containing no two consecutive numbers.*

Solution. Type your solution here! □

3.16 Theorem. *Let n be a natural number. Every complete residue system modulo n contains n elements.*

Proof. Type your proof here! □

3.17 Theorem. *Let n be a natural number. Any set of n integers $\{a_1, a_2, \ldots, a_n\}$ for which no two are congruent modulo n is a complete residue system modulo n.*

Proof. Type your proof here! □