
Math 218: Elementary Number Theory

HOMWORK 11 : DUE OCTOBER 31

2.6 #1. Find the multiplicative inverse of 5 mod 16 using Euler's theorem.

2.6 #8 Let p , as always, be a prime. If $a^p \equiv b^p \pmod{p}$, prove that $a \equiv b \pmod{p}$.

2.6 #11. If $a \equiv b \pmod{p}$ (with p prime), prove that $a^p \equiv b^p \pmod{p^2}$.

2.6 #9. (a) Find the remainder when 6^{385} is divided by 16.

(b) What are the last **two** digits of the ordinary decimal form of 3^{404} ?