

Outline notes for PS03
Math 126

Definitions. (Ch. 8) a is congruent to b modulo m ; modulus.

Problem outlines.

2(b) Proceed by contradiction:

Assume: $s > t \geq 1$ odd integers, $\gcd(s, t) = 1$, $a = st$, and $b = \frac{s^2 - t^2}{2}$.

ABC: $\gcd(a, b) > 1$.

Lead to contradiction.

8.1(b)

Assume: $a_1 \equiv b_1 \pmod{m}$, $a_2 \equiv b_2 \pmod{m}$.

Conclude: $a_1 a_2 \equiv b_1 b_2 \pmod{m}$.

8.2

Assume: $ac \equiv bc \pmod{m}$, $\gcd(c, m) = 1$.

Conclude: $a \equiv b \pmod{m}$.