

**MATH 052: FUNDAMENTALS OF MATHEMATICS  
WORKSHEET, DAY #19**

**Problem 1.** Let  $a, b, m, n \in \mathbb{Z}$  with  $m, n \geq 2$ . Show that if  $a \equiv b \pmod{m}$  and  $n \mid m$  then  $a \equiv b \pmod{n}$ .

**Problem 2.** Show that if  $a \in \mathbb{Z}$  is odd, then  $a^2 \equiv 1 \pmod{8}$ .