

**MATH 113: DISCRETE STRUCTURES**  
**HOMEWORK FOR WEDNESDAY WEEK 13**

*Problem 1.* Prove that if integers  $a$  and  $n$  are relatively prime, then  $a$  has an inverse modulo  $n$ , i.e., there exists an integer  $x$  such that  $ax \equiv 1 \pmod{n}$ .

*Problem 2.* Solve the congruence  $2x^2 - x \equiv 0 \pmod{11}$ .