

## Algebraic Proofs

Directions: Name the property of equality that justifies each statement.

1. If  $LM = NO$  and  $NO = PQ$ , then  $LM = PQ$ .
2. If  $m\angle A = 10^\circ$ , then  $12^\circ + m\angle A = 22^\circ$ .
3. If  $AB = 5$  and  $AC = AB + 8$  then  $AC = 13$ .
4. If  $m\angle C = m\angle D$ , then  $m\angle D = m\angle C$ .
5. If  $5(m\angle A) = 90^\circ$ , then  $m\angle A = 18^\circ$ .

Directions: Write an algebraic proof for each.

6. Given:  $5x - 18 = 3x + 2$   
Prove:  $x = 10$
7. Given:  $2(3x + 1) = 4x + 8$   
Prove:  $x = 3$
8. Given:  $5x - 3(9x + 12) = 8$   
Prove:  $x = -2$