Properties of Addition and Multiplication: Worked Answers

Each problem solved the way the lesson does it.

Name: _____ Date: _____

1. Name the property: a + b = b + a

   - The order of the two numbers is swapped; nothing else changed.

   Answer: Commutative property of addition

2. Name the property: (xy)z = x(yz)

   - The grouping (the parentheses) moved; the order stayed the same.

   Answer: Associative property of multiplication

3. Name the property: 6(a + b) = 6a + 6b

   - The 6 outside was handed to every term inside.

   Answer: Distributive property

4. Fill in using the commutative property: 9 + 4 = ____

   - Swap the order.

   Answer: 4 + 9

5. Fill in using the associative property: (2 + 7) + 3 = 2 + ____

   - Move the parentheses; keep the order.

   Answer: (7 + 3)

6. What is the opposite (additive inverse) of −11? Why?

   - A number plus its opposite is 0: −11 + 11 = 0.

   Answer: 11

7. What is the reciprocal (multiplicative inverse) of 2/5? Why?

   - A number times its reciprocal is 1: 2/5 × 5/2 = 1. Flip it.

   Answer: 5/2

8 Use the distributive property to expand: 4(3x + 2)

- Hand the 4 to every term: 4·3x + 4·2.

Answer: 12x + 8