

1. Write the letter of the property for real numbers demonstrated in each example. Choose properties from the box.

A. Multiplicative Identity	B. Additive Identity	C. Associative Property of Multiplication
D. Distributive Property	E. Multiplicative Inverse	F. Multiplicative Property of Zero
G. Commutative Property of Addition		H. Associative Property of Addition
I. Commutative Property of Multiplication		J. Additive Inverse

a) \_\_\_\_\_

$$5(3+9) = 5(3) + 5(9)$$

b) \_\_\_\_\_

$$6(4 \cdot 2) = (6 \cdot 4) 2$$

c) \_\_\_\_\_

$$8 + (-8) = 0$$

d) \_\_\_\_\_

$$5 + 2 = 2 + 5$$

e) \_\_\_\_\_

$$12 \times 1 = 12$$

f) \_\_\_\_\_

$$9 + (1 + 5) = (9 + 1) + 5$$

g) \_\_\_\_\_

$$7 \cdot 0 = 0$$

h) \_\_\_\_\_

$$3 \cdot 8 = 8 \cdot 3$$

i) \_\_\_\_\_

$$3 \cdot \frac{1}{3} = 1$$

j) \_\_\_\_\_

$$18 + 0 = 18$$

Choose the best answer. Place letter answers in the blanks.

\_\_\_\_\_ 2. Which property states that multiplying any number by one will give the original number of the product?

- A. Associative Property for Multiplication    B. Multiplicative Identity  
C. Distributive Property    D. Multiplicative Inverse

\_\_\_\_\_ 3. Which property is shown by  $6(x + 3) = 6x + 18$ ?

- A. Associative    B. Identity    C. Distributive    D. Commutative

\_\_\_\_\_ 4. Which is the multiplicative inverse of 8?

- A. -8    B.  $-\frac{1}{8}$     C.  $\frac{1}{8}$     D. 0

\_\_\_\_\_ 5. Rewrite  $7(w + 6)$  using the Distributive Property.

- A.  $7w + 6$     B.  $7(6 + w)$     C.  $7w + 7 \cdot 6$     D.  $7 \cdot w \cdot 6$

- \_\_\_\_\_ 6. Which is *not* a true statement?  
 A.  $3(2 + 4) = 6 + 4$                       B.  $3 + 2 + 4 = 2 + 4 + 3$   
 C.  $2(6 + 3) = 12 + 6$                       D.  $3 \cdot \frac{1}{3} = 1$
- \_\_\_\_\_ 7. Rewrite  $(2 + 3) + 4$  using the Associative Property.  
 A.  $3(2 + 4)$                       B.  $2 + (3 + 4)$                       C.  $4 + (2 + 3)$                       D.  $(3 + 2) + 4$
- \_\_\_\_\_ 8. Which property states that adding the opposite to a number results in zero?  
 A. Zero Property for Addition                      B. Zero Property for Multiplication  
 C. Inverse Property for Addition                      C. Identity Property for Addition
- \_\_\_\_\_ 9. Which number property justifies the following statement:  $4 - 2ab = 4 - 2ba$ ?  
 A. Distributive Property                      B. Associative Property for Multiplication  
 C. Identity Property for Multiplication                      D. Commutative Property for Multiplication
- \_\_\_\_\_ 10. Which of the following is an example of the Multiplicative Property of Zero?  
 A.  $10(15 \cdot 0) = 10(0 \cdot 15)$                       B.  $10 \cdot 0 = 0$   
 C.  $10 + (-10) = 0$                       D.  $10(8 + 0) = 10 \cdot 8 + 10 \cdot 0$

11. Demonstrate the stated property by filling in the boxes with the numbers in bold. Numbers may be used more than once to complete the example.

- 6, 4, 9**                      Associative Property of Multiplication                       $\square (\square \cdot \square) = (\square \cdot \square) \square$
- 4, 0, 4**                      Additive Inverse                       $\square + \square = \square$
- 5, 8**                      Commutative Property of Addition                       $\square + \square = \square + \square$
- 1, 3**                      Multiplicative Identity                       $\square \cdot \square = \square$
- 2, 7, 11**                      Associative Property of Addition                       $\square + (\square + \square) = (\square + \square) + \square$
- 0, 9**                      Multiplicative Property of Zero                       $\square \cdot \square = \square$
- 6, 5**                      Commutative Property of Multiplication                       $\square \cdot \square = \square \cdot \square$
- 1, 4,  $\frac{1}{4}$**                       Multiplicative Inverse                       $\square \cdot \square = \square$
- 12, -12, 0**                      Additive Identity                       $\square + \square = \square$
- 2, 3, 7**                      Distributive Property                       $\square (\square - \square) = \square (\square) - \square (\square)$

12. Identify the number property used to simplify the expression. State the property used to get to the step beside the blank.

a)  $4(x - 6)$   
 $4x - 24$

\_\_\_\_\_

b)  $25 + (6 \cdot 7) \times 1$   
 $25 + 42 \times 1$   
 $25 + 42$   
 $67$

\_\_\_\_\_

c)  $\frac{1}{5} \cdot 5 + (-8 + 8)$   
 $\frac{1}{5} \cdot 5 + 0$   
 $1 + 0$   
 $1$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

d)  $[(8 + 7) + 3] + 0 + (-18)$   
 $[8 + (7 + 3)] + 0 + -18$   
 $(8 + 10) + 0 + (-18)$   
 $18 + 0 + (-18)$   
 $18 + (-18)$   
 $0$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Use the Distributive Property to evaluate the expression. Show all steps.**

13.  $4(100 - 6)$

14.  $(12 + 9)5$

15.  $6(8 - 5) + 3(12 + 4)$

## Math SOL 7.16—Number Properties

### Answer Key

1. a) D                      b) C                      c) J                      d) G                      e) A                      f) H  
    g) F                      h) I                      i) E                      j) B
2. B
3. C
4. C
5. C
6. A
7. B
8. C
9. D
10. B
11. Answers will vary
12. a) Distributive Property  
    b) Multiplicative Identity  
    c) Additive Inverse; Multiplicative Inverse; Additive Identity  
    d) Associative Property for Addition; Additive Identity; Additive Inverse
13.  $4 \times 100 - 4 \times 6 = 400 - 24 = 376$
14.  $12 \times 5 + 12 \times 9 = 60 + 45 = 105$
15.  $6 \times 8 - 6 \times 5 + 3 \times 12 + 3 \times 4 = 48 - 30 + 36 + 12 = 18 + 36 + 12 = 54 + 12 = 66$