

Name \_\_\_\_\_ Date \_\_\_\_\_ Pd \_\_\_\_\_

### CYU 1.8 Properties of Real Numbers

Use when you get it right all by yourself

**S** Use when you did it all by yourself, but made a silly mistake

**H** Use when you could do it alone with a little help from teacher or peer

**G** Use when you completed the problem in a group

**X** Use when a question was attempted but wrong (get help)

**N** Use when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Commutative Property	1 - 4	9 - 15	36 - 44
Associative Property	5 - 8	9 - 15	36 - 44
Distributive Property	16 - 22	23 - 27	28 - 35

Use a commutative property to complete each statement.

1.  $x + 16 =$  \_\_\_\_\_

3.  $xy =$  \_\_\_\_\_

2.  $-4y =$  \_\_\_\_\_

4.  $2x + 13 =$  \_\_\_\_\_

Use an associative property to complete each statement.

5.  $(xy) \cdot z =$  \_\_\_\_\_

7.  $4 \cdot (ab) =$  \_\_\_\_\_

6.  $2 + (a + b) =$  \_\_\_\_\_

8.  $(a + b) + c =$  \_\_\_\_\_

Use the commutative and associative properties to simplify each expression.

9.  $8 + (9 + b) =$  \_\_\_\_\_

13.  $-9(8x) =$  \_\_\_\_\_

10.  $4(6y) =$  \_\_\_\_\_

14.  $\frac{3}{4} \left( \frac{4}{3} s \right) =$  \_\_\_\_\_

11.  $\frac{1}{5}(5y) =$  \_\_\_\_\_

15.  $\frac{2}{3} + \left( \frac{4}{3} + x \right) =$  \_\_\_\_\_

12.  $(13 + a) + 13 =$  \_\_\_\_\_

Use the distributive property to write each expression without parentheses. Then simplify the results.

16.  $4(x + y)$

18.  $2(3x + 5)$

17.  $9(x - 6)$

19.  $7(4x - 3)$

20.  $3(6 + x)$

26.  $-(r - 3 - 7p)$

21.  $-2(y - z)$

27.  $\frac{1}{2}(6x + 8)$

22.  $-7(3y + 5)$

28.  $-9(4x + 8) + 2$

23.  $5(x + 4m + 2)$

29.  $3(2r + 5) - 7$

24.  $-4(1 - 2m + n)$

30.  $-9(4x + 8) + 2$

25.  $-(5x + 2)$

31.  $-4(4x + 5) - 5$

Use the distributive property to write each sum as a product.

32.  $4 \cdot 1 + 4 \cdot y$

34.  $(-1) \cdot 5 + (-1) \cdot x$

33.  $11x + 11y$

35.  $30a + 30b$

Name the properties illustrated by each true statement.

36.  $3 \cdot 5 = 5 \cdot 3$

41.  $6 \cdot \frac{1}{6} = 1$

37.  $4(3 + 8) = 4 \cdot 3 + 4 \cdot 8$

42.  $0 + 6 = 6$

38.  $2 + (x + 5) = (2 + x) + 5$

43.  $-4(y + 7) = -4 \cdot y + (-4) \cdot 7$

39.  $9(3 + 7) = 9 \cdot 3 + 9 \cdot 7$

44.  $-4 \cdot (8 \cdot 3) = (8 \cdot -4) \cdot 3$

40.  $(4 \cdot y) \cdot 9 = 4 \cdot (y \cdot 9)$

**CYU Reflection:** How far can you go: basic, intermediate, or advanced?

**Rate your mastery level!**

How confident are you with the skills this CYU covered? Circle the score you would give yourself.

