

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Hour: \_\_\_\_\_

### 3.3 Properties DAY TWO Worksheet

Tell which property is represented.

1)  $1 + (6+7) = (1+6) + 7$  \_\_\_\_\_

2)  $1 \cdot 10 = 10$  \_\_\_\_\_

3)  $3 \cdot 5 = 5 \cdot 3$  \_\_\_\_\_

4)  $6 + 0 = 6$  \_\_\_\_\_

5)  $4 \cdot (4 \cdot 2) = (4 \cdot 4) \cdot 2$  \_\_\_\_\_

6)  $7(3 + 5) = (7 \cdot 3) + (7 \cdot 5)$  \_\_\_\_\_

Knowing and understanding the properties of numbers can really help make our life easier! If you know and understand the properties, you will know how you can simplify/ rearrange a problem to make it easier while still getting the same answer.

The following expressions have been simplified to create equivalent expressions. Tell which property justifies each step.

7)  $8 + 23 + 2$   
 $8 + 2 + 23$   
 $10 + 23$   
 $33$  \_\_\_\_\_

8)  $2 \cdot (17 \cdot 5)$   
 $2 \cdot (5 \cdot 17)$   
 $(2 \cdot 5) \cdot 17$   
 $10 \cdot 17$   
 $170$  \_\_\_\_\_

9)  $9(20 + 7)$   
 $(9 \cdot 20) + (9 \cdot 7)$   
 $(180) + (63)$   
 $243$  \_\_\_\_\_

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Simplify the expressions to create equivalent expressions using the properties of numbers. Some of the algebraic expressions have been simplified for you. Write the property on the line that justifies the change from the step above to the current line.

Choose from: Identity, Commutative, Associative, or Distributive.

10)  $7 + (12 + x)$

\_\_\_\_\_  
\_\_\_\_\_

11)  $(6.1 + x) + 8.4$

$(x + 6.1) + 8.4$

$x + (6.1 + 8.4)$

$x + 14.5$

\_\_\_\_\_  
\_\_\_\_\_

12)  $4(x + 2)$

$4 \cdot x + 4 \cdot 2$

$4x + 8$

\_\_\_\_\_

13)  $9 \cdot (1 \cdot p)$

$(9 \cdot 1) \cdot p$

$9p$

\_\_\_\_\_  
\_\_\_\_\_

14)  $7(36)$

$7(30 + 6)$

$7(30) + 7(6)$

$210 + 42$

$252$

\_\_\_\_\_

15)  $4 + g + 10$

\_\_\_\_\_  
\_\_\_\_\_