

Name: \_\_\_\_\_

## Associative Property of Multiplication

The *Associative Property of Multiplication* states that the product of a set of numbers is the same, no matter how they are grouped.

Example:

$$\begin{aligned}(2 \times 3) \times 4 &= 4 \times (3 \times 2) \\ 6 \times 4 &= 4 \times 6 \\ 24 &= 24\end{aligned}$$

Part 1: Tell whether the products of the sets of numbers are equal or not equal.

Write an "equals sign" (=) on the line if the sets have equal products.

Write a "not equals sign" ( $\neq$ ) if the sets have unequal products.

a.  $(3 \times 4) \times 2$  \_\_\_\_\_  $3 \times (4 \times 2)$

b.  $(2 \times 2) \times 3$  \_\_\_\_\_  $2 \times (3 \times 3)$

c.  $12 \times (6 \times 0)$  \_\_\_\_\_  $(12 \times 6) \times 0$

d.  $(4 \times 1) \times 7$  \_\_\_\_\_  $4 \times (3 \times 7)$

Part 2: Find the product of the numbers on the left of the "equals sign" (=) and the product of the numbers on the right. Write your answers on the lines below each problem.

e.  $(2 \times 6) \times 2 = 2 \times (6 \times 2)$   
\_\_\_\_\_

f.  $(2 \times 5) \times 2 = 2 \times (5 \times 2)$   
\_\_\_\_\_

g.  $(4 \times 7) \times 1 = 4 \times (7 \times 1)$   
\_\_\_\_\_

h.  $(3 \times 3) \times 4 = 3 \times (3 \times 4)$   
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a.  $(3 \times 4) \times 2$    =    $3 \times (4 \times 2)$

b.  $(2 \times 2) \times 3$     $\neq$     $2 \times (3 \times 3)$

c.  $12 \times (6 \times 0)$    =    $(12 \times 6) \times 0$

d.  $(4 \times 1) \times 7$     $\neq$     $4 \times (3 \times 7)$

Part 2: Find the product of the numbers on the left of the "equals sign" (=) and the product of the numbers on the right. Write your answers on the lines below each problem.

e.  $(2 \times 6) \times 2 = 2 \times (6 \times 2)$   
  24                          24  

f.  $(2 \times 5) \times 2 = 2 \times (5 \times 2)$   
  20                          20  

g.  $(4 \times 7) \times 1 = 4 \times (7 \times 1)$   
  28                          28  

h.  $(3 \times 3) \times 4 = 3 \times (3 \times 4)$   
  36                          36