



Multiple Ways to Multiply



The zero property: Any factor multiplied by 0 always has a product of 0.

$$9 \times 0 = 0$$

The property of one: Any factor multiplied by 1 always has a product of the other factor.

$$5 \times 1 = 5$$

The commutative property: Changing the order of the factors does not change the product.

$$4 \times 3 = 3 \times 4$$

The associative property: Changing how the factors are grouped does not change the product.

$$(5 \times 2) \times 6 = 5 \times (2 \times 6)$$

The distributive property: Multiplying a factor by the sum of two numbers equals the sum of the two products.

$$6 \times (2 + 5) = (6 \times 2) + (6 \times 5)$$

Identify each property and then solve.

A. _____ $5 \times 6 = 6 \times 5$

$$5 \times 11 = \square \times \square$$

$$4 \times \square = 12 \times \square$$

$$\square \times \square = 7 \times 6$$

$$\square \times 9 = \square \times 3$$

$$8 \times 10 = \square \times \square$$

$$2 \times \square = 5 \times \square$$

B. _____ $3 \times (2 + 5) = (3 \times 2) + (3 \times 5)$

$$6 \times (4 + 5) = (6 \times \square) + (6 \times \square)$$

$$7 \times (\square + \square) = 7 \times 5 + (7 \times 8)$$

$$9 \times (3 + 7) = (9 \times \square) + (9 \times \square)$$

$$\square \times (5 + 8) = (3 \times 5) + (3 \times 8)$$

C. _____ $135 \times 0 = 0$

$$18 \times \square = 0$$

$$3 \times 0 = \square$$

$$\square \times 11 = 0$$

$$9 \times \square = 0$$

$$8 \times 0 = \square$$

$$7 \times 0 = \square$$

$$15 \times \square = 0$$

$$0 \times 6 = \square$$

$$8 \times \square = 0$$

$$\square \times 9 = 0$$

D. _____ $3 \times (2 \times 4) = (3 \times 2) \times 4$

$$6 \times (2 \times 3) = (\underline{\hspace{2cm}}) \times 3$$

$$8 \times (12 \times 2) = (\underline{\hspace{2cm}}) \times 2$$

$$(5 \times 4) \times 6 = 5 \times (4 \times \square)$$

$$\square \times (4 \times 9) = (6 \times 4) \times 9$$

$$(5 \times 2) \times 3 = 5 \times (\underline{\hspace{2cm}})$$

$$4 \times (\underline{\hspace{2cm}}) = (\square \times 3) \times 8$$

