

Properties of Multiplication

Commutative Property

$$7 \times 2 = 14$$

$$2 \times 7 = 14$$

$$7 \times 2 = 2 \times 7$$

Changing the order of the factors does not change the product.

Associative Property

$$(3 \times 2) \times 4 = 24$$

$$3 \times (2 \times 4) = 14$$

$$(3 \times 2) \times 4 = 3 \times (2 \times 4)$$

Changing the grouping of the factors does not change the product.

Identity Property

$$1 \times 9 = 9$$

$$9 \times 1 = 9$$

The product of one and any other number is that number.

Zero Property

$$0 \times 8 = 0$$

$$8 \times 0 = 0$$

The product of zero and any other number is zero.

Distributive Property

$$3 \times (1 + 5) = 3 \times 6 = 18$$

$$(3 \times 1) + (3 \times 5) = 3 + 15 = 18$$

$$3 \times (1 + 5) = (3 \times 1) + (3 \times 5)$$

The product of a factor and a sum is equal to the sum of the products.