

## Lesson 4 - The Distributive Property

Distributive Property		
Words	To multiply a sum or difference by a number, multiply each term inside the parentheses by the number outside the parentheses.	
Symbols	$a(b + c) = ab + ac$	$a(b - c) = ab - ac$
Examples	$3(2 + 5) = 3 \cdot 2 + 3 \cdot 5$	$6(8 - 3) = 6 \cdot 8 - 6 \cdot 3$

### Examples

Use the Distributive Property to evaluate each expression.

**1**  $5(x + 3)$

$$5(x + 3) = 5 \cdot x + 5 \cdot 3$$

Expand using the Distributive Property

$$= 5x + 15$$

Simplify.

**2**  $(4x - y)9$

$$(4x - y)9 = [4x + (-y)]9$$

Rewrite  $4x - y$  as  $4x + (-y)$ .

$$= (4x)9 + (-y)9$$

Expand using the Distributive Property.

$$= 36x + (-9y)$$

Simplify.

$$= 36x - 9y$$

Definition of subtraction.

### Example 3

**MOVIES** Alwyn is taking three of his friends to the movies. Tickets cost \$8.90 per person. Find Alwyn's total cost.

You can use the Distributive Property to find the total cost mentally.

$$4(\$9 - \$0.10) = 4(\$9) - 4(\$0.10)$$

Distributive Property

$$= \$36 - \$0.40$$

Multiply.

$$= \$35.60$$

Subtract.

Alwyn will pay \$35.60 for himself and three friends to go to the movies.

### Exercises

Use the Distributive Property to evaluate or rewrite each expression.

**1.**  $5(w + 4)$

**2.**  $(x - 5)(-2)$

**3.**  $7(6x - 2y)$

**4.**  $-6(4 + 2m)$

**5.**  $8(2n + 7)$

**6.**  $(3v + 6w)2$

**7. BOOKS** Mariah bought 7 books costing \$11.20 each. Find the total cost of the 7 books. Justify your answer by using the Distributive Property.

# Lesson 4 Skills Practice

## *The Distributive Property*

Use the Distributive Property to evaluate each expression.

1.  $3(2 + 8)$

2.  $(-3 + 4)2$

3.  $-5(4 - 2)$

4.  $(12 + 13)(-2)$

5.  $8(10 - 4)$

6.  $(-4)(-7)(-1)$

7.  $(-7 + 3)4$

8.  $-1(18 - 11)$

Use the Distributive Property to rewrite each expression.

9.  $6(t + 2)$

10.  $-5(4 + x)$

11.  $(5 + v)(-3)$

12.  $(w - 2)4$

13.  $-7(8n - m)$

14.  $(6 + d)(-6)$

15.  $(4c + 2d)(-2)$

16.  $-2(3f - 5g)$

17. **TRAIN RIDE** Mr. and Mrs. Caputo are taking their family into the city on the train. The cost per person is \$5.80. If there are 4 members in their family, how much does the train trip cost? Justify your answer by using the Distributive Property.

18. **CAMPING** Chantee went camping over the weekend. The cost for the site was \$16.95 a night for three nights. How much did it cost her to camp? Justify your answer by using the Distributive Property.