Lesson 4 Reteach

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 $5(x + 3)$

$\begin{aligned} 5(x + 3) &= 5 \cdot x + 5 \cdot 3 & \text{Expand using the Distributive Property} \\ &= 5x + 15 & \text{Simplify.} \end{aligned}$

2 $(4x - y)9$

$\begin{aligned} (4x - y)9 &= [4x + (-y)]9 & \text{Rewrite } 4x - y \text{ as } 4x + (-y). \\ &= (4x)9 + (-y)9 & \text{Expand using the Distributive Property.} \\ &= 36x + (-9y) & \text{Simplify.} \\ &= 36x - 9y & \text{Definition of subtraction.} \end{aligned}$

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.

$\begin{aligned} 4(\$9 - \$0.10) &= 4(\$9) - 4(\$0.10) & \text{Distributive Property} \\ &= \$36 - \$0.40 & \text{Multiply.} \\ &= \$35.60 & \text{Subtract.} \end{aligned}$

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. $5(w + 4)$
   5w + 20

2. $(x - 5)(-2)$
   −2x + 10

3. $7(6x - 2y)$
   42x − 14y

4. $-6(4 + 2m)$
   −24 − 12m

5. $8(2n + 7)$
   16n + 56

6. $(3v + 6w)2$
   6v + 12w

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.
   $78.40; 7($11 + $0.20) = 7 • $11 + 7 • $0.20 = $77 + $1.40

Lesson 4 Skills Practice

The Distributive Property

Use the Distributive Property to evaluate each expression.

1. $3(2 + 8)$

30

2. $(-3 + 4)2$

2

3. $-5(4 - 2)$

−10

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

−50

5. $8(10 - 4)$

48

6. $(-4 + -7)(-3)$

33

7. $(-7 + 3)4$

−16

8. $-1(18 - 11)$

−7

Use the Distributive Property to rewrite each expression.

9. $6(t + 2)$ **6t + 12**

10. $-5(4 + x)$ **−20 −5x**

11. $(5 + v)(-3)$ **−15 −3v**

12. $(w - 2)4$ **4w −8**

13. $-7(8n - m)$ **−56n + 7m**

14. $(6 + d)(-6)$ **−36 −6d**

15. $(4c + 2d)(-2)$ **−8c − 4d**

16. $-2(3f - 5g)$ **−6f + 10g**

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.
$23.20; 4($6 − $0.20) = 4 • $6 − 4 • $0.20 = $24 − $0.80

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.
$50.85; 3($17 − $0.05) = 3 • $17 − 3 • $0.05 = $51 − $0.15