

# Distributive Property

Multiplication 'distributes' over addition (and subtraction):

$$a(b + c) = ab + ac$$

$$a(b - c) = ab - ac$$

1. Substitute the given values to the equation  $a(b + c) = ab + ac$ . Study the example.

a.  $a = 2, b = 10, \text{ and } c = 4.$

$$2(10 + 4) = 2 \times 10 + 2 \times 4$$

b.  $a = 7, b = 8, \text{ and } c = 5$

c.  $a = 4, b = x, \text{ and } c = 5$

2. Substitute the given values to the equation  $a(b - c) = ab - ac$ .

a.  $a = 2, b = 10, \text{ and } c = 4.$

b.  $a = 3, b = x, \text{ and } c = 7$

c.  $a = 9, b = x, \text{ and } c = y$

3. Take out the parentheses using the distributive property.

a.  $6(7 + 0.2)$

b.  $6(x + 10)$

c.  $2(x - 5)$

d.  $4(110 + 40 + 3)$

e.  $8(x - y)$

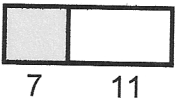
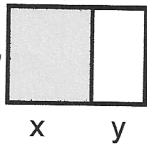
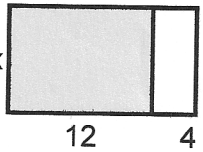
f.  $4(8 - w - z)$

g.  $y(2 + z)$

h.  $a(b - c + 4)$

i.  $4(t + r - s)$

4. Write TWO expressions for the area according to the example.

<p>a. </p> <p>Area... as one rectangle: <math>7 \times (7 + 11)</math></p> <p>as two rectangles: <math>7 \times 7 + 7 \times 11</math></p>	<p>b. </p>	<p>c. </p>
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5. Write these expressions using the distributive property of multiplication. Find their values in a, b, and c.

a.  $8 \times 2 + 8 \times 500$

b.  $7 \times 200 - 7 \times 0.4$

c.  $4(100) - 4(20) + 4(5)$

d.  $9y + 9z$

e.  $7a - 7b + 7c$

f.  $8x + 8$

6. Solve mentally using the distributive property.

a.  $5 \times 98 = 5 \times (100 - 2) =$

b.  $8 \times 999$

c.  $4 \times 20.5$

d.  $8 \times 21.4$

e.  $4 \times 49$

f.  $3 \times 3,028$