# Worksheet: The Distributive Property

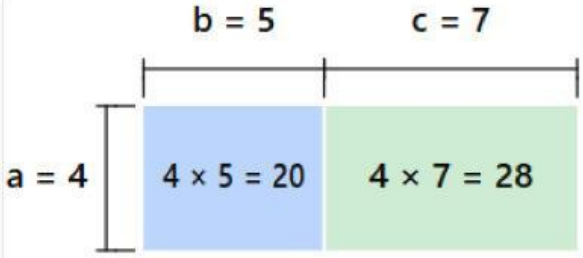
**The Distributive Property**

The **Distributive Property** allows you to multiply a number by everything inside parentheses.

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

$$4(5+7) = 20 + 28 = 48$$

a = 4 is the shared height; b = 5 and c = 7 split the width. The colored areas 20 and 28 add to 48.




**Rule:**

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

**Steps**

1. Multiply the number **outside** the parentheses by the **first** term.
2. Multiply the number **outside** the parentheses by the **second** term.
3. Combine the results.

**Example 1**

Simplify:

$4(x+3)$

Multiply 4 by each term:

$4 \times x = 4x$

$4 \times 3 = 12$

**Answer:**

$\boxed{4x + 12}$

**Example 2**

Simplify:

$5(2y-7)$

Multiply 5 by each term:

$5 \times 2y = 10y$

$5 \times (-7) = -35$

**Answer:**

$\boxed{10y - 35}$

**Example 3**

Simplify:

$-3(m+8)$

Multiply -3 by each term:

$-3 \times m = -3m$

$-3 \times 8 = -24$

**Answer:**

$\boxed{-3m - 24}$

**Part A – Use the Distributive Property -** Simplify each expression.

1. $3(x+5)$ = _____
2. $6(y+2)$ = _____
3. $8(a-4)$ = _____
4. $5(b+9)$ = _____
5. $9(c-6)$ = _____
6. $4(2x+7)$ = _____
7. $7(3m-5)$ = _____
8. $2(6n+4)$ = _____
9. $5(4p-8)$ = _____
10. $3(7q+9)$ = _____

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**Part B – Watch the Signs -** Simplify each expression.

11. $-2(x+6)$ = _____

12. $-5(y-3)$ = _____

13. $-4(2m+5)$ = _____

14. $-3(4n-8)$ = _____

15. $-7(3a+1)$ = _____

16. $-6(5b-2)$ = _____

17. $-8(c+4)$ = _____

18. $-9(2d-5)$ = _____

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