Worksheet: Expanding Expressions

Expanding Expressions

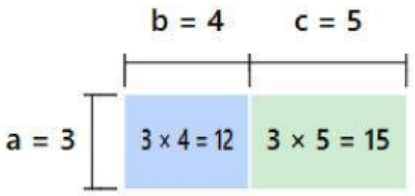
Expanding an expression means **removing parentheses** by using the **Distributive Property** and then **combining like terms** (if necessary).

The distributive property says:

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

$$3(4+5) = 12 + 15 = 27$$

a = 3 is the shared height; b = 4 and c = 5 split the width. The colored areas 12 and 15 add to 27.



Steps for Expanding Expressions

1. Multiply the number outside the parentheses by **every term** inside the parentheses.
2. Remove the parentheses.
3. Combine like terms if possible.

Example 1

Expand:

$4(x+3)$

Multiply 4 by each term:

$4 \times x = 4x$

$4 \times 3 = 12$

Answer:

$4x + 12$

Example 2

Expand:

$5(2y-4)$

Multiply 5 by each term:

$5 \times 2y = 10y$

$5 \times (-4) = -20$

Answer:

$10y - 20$

Example 3

Expand and simplify:

$3(x+4) + 2x$

Expand and simplify:

$3x + 12 + 2x$

Combine Like Terms:

$5x + 12$

Answer:

$5x + 12$

Example 4

Expand first:

$-2(3m-5) + 4m$

Expand:

$-6m + 10 + 4m$

Combine Like Terms:

$-2m + 10$

Answer:

$-2m + 10$

Part A – Expand the Expressions - Expand each expression.

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

LIVEWORKSHEETS

Part B – Expand and Simplify

11. $3(x+4)+5x$ = _____

12. $4(y-2)+3y$ = _____

13. $2(5m+6)-m$ = _____

14. $6(n+1)+2n$ = _____

15. $5(a-3)+4a$ = _____

16. $7(2b+4)-3b$ = _____

17. $8(c-5)+c$ = _____

11. $9(2d+1)-5d$ = _____

Part C – Negative Numbers - Expand and simplify.

19. $-3(x+6)$ = _____

20. $-4(y-5)$ = _____

21. $-2(3m+7)$ = _____

22. $-5(4n-2)$ = _____

23. $-6(a+3)+2a$ = _____

24. $-7(2b-4)-b$ = _____

25. $-8(c+5)+3c$ = _____

26. $-9(3d-1)+4d$ = _____

LIVEWORKSHEETS