Multiply Every Term

EX08-V1 · storyboard · EX08 Expand a product. Read each picture with its sentences.

Picture 1

Expand $2(x+7)$.

$$2 \cdot x + 2 \cdot 7$$ the 2 multiplies both terms

$$= \boxed{2x + 14}$$

1. Expand two times the bracket x + 7.
2. The two multiplies both terms: two times x, and two times seven.
3. That is 2x + 14.

Picture 2

Expand $-3(x-4)$.

$$(-3) \cdot x + (-3) \cdot (-4)$$ the sign goes too

$$= \boxed{-3x + 12} \quad (-3)(-4) = +12$$

4. Now expand negative three times the bracket x − 4.
5. The factor is negative three, and its sign goes with it, to both terms.
6. Negative three times negative four is positive: −3x + 12.

Picture 3

Expand $x(2x^2 + 3x - 7)$.

$$x \cdot 2x^2 + x \cdot 3x - x \cdot 7$$ every term

$$= \boxed{2x^3 + 3x^2 - 7x}$$ each power goes up by one

7. A letter outside: x times the bracket 2x² + 3x − 7.
8. The x multiplies every term.
9. Each power goes up by one: 2x³ + 3x² − 7x.

Picture 4

Trap $2(x + 7)$

$\times$ $2x + 7$

✓ $2x + 14$

10. Watch for the trap: multiplying only the first term.
11. Two times the bracket x + 7 is not 2x + 7.
12. The two multiplies the seven too: 2x + 14.

Picture 5

Trap $-3(x-4)$

$\times \quad -3x-12$

$\checkmark \quad -3x+12$

13. And keep the signs.
14. Negative three times the bracket x − 4 is not −3x − 12.
15. Negative times negative is positive: −3x + 12.