



The distributive property

Multiply over a sum

Over a sum Every term takes it.

$$3(x + 4) = 3x + 12$$

Over a difference The minus travels too.

$$5(x - 2) = 5x - 10$$

A negative outside Both signs flip.

$$-2(x - 5) = -2x + 10$$

Simplify $3(x + 4) - 2x + 7$ — naming each step

1 Distributive

$$3x + 12 - 2x + 7$$

2 Commutative — reorder

$$3x - 2x + 12 + 7$$

3 Combine

$$x + 19$$

Backwards, it is factoring

Find what divides both Take it outside.

$$6x + 15 = 3(2x + 5)$$

Check it Multiply back out.

$$3(2x + 5) = 6x + 15$$

Not this — this

$3(x + 4)$ is not $3x + 4$.

the 4 gets multiplied too

$-2(x - 5)$ is not $-2x - 10$.

minus times minus is plus

$3(x + 4)$ is not $3x \times 3(4)$.

multiply once, into each term