

Expand and Simplify

Practice Worksheet

I DO

Expand and simplify $(x - 4)(x + 7)$

WE DO

Expand and simplify $(x + 5)(x - 2)$

YOU DO 1

Expand and simplify $(x + 3)(x + 6)$

YOU DO 2

Expand and simplify $(x - 5)(x - 8)$

CHALLENGE

Expand and simplify $(2x - 3)(x + 4)$

PRACTICE PERFECT

Expand and simplify the following expressions. Show your working.

1) Expand and simplify $(x + 2)(x + 5)$

2) Expand and simplify $(x - 3)(x + 9)$

3) Expand and simplify $(x - 7)(x - 4)$

4) Expand and simplify $(y + 6)(y - 6)$

5) Expand and simplify $(2x + 1)(x + 5)$

6) Expand and simplify $(3a - 2)(a + 4)$

7) Expand and simplify $(4p - 3)(2p - 1)$

8) Expand and simplify $(3x + 5)(3x - 5)$

9) Expand and simplify $(x + 1)(x + 2)(x + 3)$

10) Expand and simplify $(x - 2)(x + 4)(x - 1)$

11) Expand and simplify $(2x + 3)(x - 2)(x + 1)$

12) Expand and simplify $(x - 3)^3$

ANSWERS & WORKED SOLUTIONS

I Do

Step 1: Multiply terms (FOIL).

$$x \times x = x^2$$

$$x \times 7 = 7x$$

$$-4 \times x = -4x$$

$$-4 \times 7 = -28$$

Step 2: Collect like terms ($7x - 4x = 3x$).

Answer: $x^2 + 3x - 28$

We Do

Step 1: Multiply terms.

$$x^2 - 2x + 5x - 10$$

Step 2: Collect like terms.

Answer: $x^2 + 3x - 10$

You Do 1

Step 1: Multiply terms.

$$x^2 + 6x + 3x + 18$$

Step 2: Collect like terms.

Answer: $x^2 + 9x + 18$

You Do 2

Step 1: Multiply terms.

$$x^2 - 8x - 5x + 40$$

Step 2: Collect like terms.

Answer: $x^2 - 13x + 40$

Challenge

Step 1: Multiply terms.

$$2x \times x = 2x^2$$

$$2x \times 4 = 8x$$

$$-3 \times x = -3x$$

$$-3 \times 4 = -12$$

Step 2: Collect like terms ($8x - 3x = 5x$).

Answer: $2x^2 + 5x - 12$

Practice Perfect

1) $x^2 + 7x + 10$

3) $x^2 - 11x + 28$

5) $2x^2 + 11x + 5$

7) $8p^2 - 10p + 3$

9) Expand first two: $(x^2 + 3x + 2)(x + 3)$
Multiply by third: $x^3 + 3x^2 + 3x^2 + 9x + 2x + 6$
 $= x^3 + 6x^2 + 11x + 6$

11) Expand first two: $(2x^2 - x - 6)(x + 1)$
Multiply by third: $2x^3 + 2x^2 - x^2 - x - 6x - 6$
 $= 2x^3 + x^2 - 7x - 6$

2) $x^2 + 6x - 27$

4) $y^2 - 36$

6) $3a^2 + 10a - 8$

8) $9x^2 - 25$

10) Expand first two: $(x^2 + 2x - 8)(x - 1)$
Multiply by third: $x^3 - x^2 + 2x^2 - 2x - 8x + 8$
 $= x^3 + x^2 - 10x + 8$

12) Write out: $(x - 3)(x - 3)(x - 3)$
Expand first two: $(x^2 - 6x + 9)(x - 3)$
Multiply by third: $x^3 - 3x^2 - 6x^2 + 18x + 9x - 27$
 $= x^3 - 9x^2 + 27x - 27$