Interleaved: expanding and factorising

ANSWERS

1

Write $3(2x - 5)$ in its other form.

Which method? Expand one bracket | Expand two brackets | Take out a factor | Factorise a quadratic

brackets, so multiply out: $3 \times 2x$ and 3×-5

Answer $6x - 15$

2

Write $x^2 + 7x + 12$ in its other form.

Which method? Expand one bracket | Expand two brackets | Take out a factor | Factorise a quadratic

$3 \times 4 = 12$ and $3 + 4 = 7$

Answer $(x + 3)(x + 4)$

3

Write $(x + 5)(x - 2)$ in its other form.

Which method? Expand one bracket | Expand two brackets | Take out a factor | Factorise a quadratic

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

Answer $x^2 + 3x - 10$

4

Write $12x + 18$ in its other form.

Which method? Expand one bracket | Expand two brackets | Take out a factor | Factorise a quadratic

the highest common factor is 6

Answer $6(2x + 3)$

5

Write $4x(x - 3)$ in its other form.

Which method? Expand one bracket | Expand two brackets | Take out a factor | Factorise a quadratic

$4x \times x$ and $4x \times -3$

Answer $4x^2 - 12x$

6

Write $x^2 - 2x - 15$ in its other form.

Which method? Expand one bracket | Expand two brackets | Take out a factor | Factorise a quadratic

$-5 \times 3 = -15$ and $-5 + 3 = -2$

Answer $(x - 5)(x + 3)$

7

Write $10x^2 + 15x$ in its other form.

Which method? Expand one bracket | Expand two brackets | Take out a factor | Factorise a quadratic

5 and x go into both terms

Answer $5x(2x + 3)$

8

Write $(2x + 1)(x + 4)$ in its other form.

Which method? Expand one bracket | Expand two brackets | Take out a factor | Factorise a quadratic

$2x^2 + 8x + x + 4$

Answer $2x^2 + 9x + 4$

Interleaved: expanding and factorising *further practice*

ANSWERS

9

A rectangle is $(x + 6)$ cm long and $(x + 2)$ cm wide. Write an expression for its area without brackets.

$(x + 6)(x + 2)$

Answer $x^2 + 8x + 12$ cm^2

10

The area of a rectangle is $x^2 + 9x + 20$ cm^2. Find expressions for its length and width.

$4 \times 5 = 20$ and $4 + 5 = 9$

Answer $(x + 4)$ and $(x + 5)$

11

Expand and simplify $3(x + 4) + 2(x - 1)$.

$3x + 12 + 2x - 2$

Answer $5x + 10$

12

Factorise fully $8x^2y + 12xy^2$.

4, x and y go into both terms

Answer $4xy(2x + 3y)$

13

Factorise $x^2 - 49$.

the difference of two squares: $7 \times -7 = -49$, $7 + -7 = 0$

Answer $(x + 7)(x - 7)$

14

Expand and simplify $(x - 3)^2$.

$(x - 3)(x - 3)$

Answer $x^2 - 6x + 9$

15

Show that $5(2x + 1) - 3(x - 4)$ simplifies to $7x + 17$.

$10x + 5 - 3x + 12$

Answer $7x + 17$

16

Mia factorises $x^2 + 5x + 6$ and gets $x(x + 5) + 6$. Explain why this is not factorised, and factorise it.

the + 6 is outside, so it is not one product

Answer $(x + 2)(x + 3)$