Factorising into a single bracket

ANSWERS

1 the HCF goes on the side

Factorise $8x + 12$

4	$2x$	$+3$
	$8x$	$+12$

Answer $4(2x + 3)$

2

Factorise $6x - 15$

3	$2x$	-5
	$6x$	-15

Answer $3(2x - 5)$

3

Factorise $20x + 8$

4	$5x$	$+2$
	$20x$	$+8$

Answer $4(5x + 2)$

4 *Notice the change!*

Factorise $x^2 + 7x$

x	x	$+7$
	x^2	$+7x$

Answer $x(x + 7)$

5 numbers, then letters

Factorise $6x^2 + 8x$

$2x$	$3x$	$+4$
	$6x^2$	$+8x$

Answer $2x(3x + 4)$

6 the highest common factor

Factorise fully $18x + 24$

6	$3x$	$+4$
	$18x$	$+24$

Answer $6(3x + 4)$

7

Ollie factorises $9x + 9$ and writes $9(x)$. Explain his mistake. Then write the right answer.

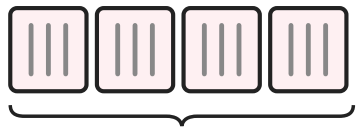
$9(x)$ expands to $9x$ only: $9 \times 1 = 9$

Answer $9(x + 1)$

8

Four identical packs of pens weigh $(12x + 20)$ g altogether.

Factorise $12x + 20$. Then write an expression for the weight of one pack.



$12x + 20 = 4(3x + 5)$

Answer $(3x + 5)$ g

Factorising into a single bracket *further practice*

ANSWERS

9

Factorise $9x + 15$

HCF of 9 and 15 is 3

Answer $3(3x + 5)$

10

Factorise $4y - 28$

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

Answer $4(y - 7)$

11

Factorise $y^2 - 6y$

both terms have y

Answer $y(y - 6)$

12

Fill in the box.

$8x + 20 = \square(2x + 5)$

$2x \times 4 = 8x$ and $5 \times 4 = 20$

Answer 4

13

Factorise fully $6x + 9y + 12$

HCF of 6, 9 and 12 is 3

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

14

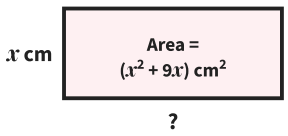
Six friends share a bill of £$(18x + 30)$ equally. Factorise $18x + 30$, and write an expression for what each friend pays.

$18x + 30 = 6(3x + 5)$

Answer £$(3x + 5)$

15

The rectangle has an area of $(x^2 + 9x)$ cm^2 and a width of x cm. Find an expression for its length.



$x^2 + 9x = x(x + 9)$

Answer $(x + 9)$ cm

16

Mo says that $20x + 30 = 5(4x + 6)$ is factorised fully. Is he right? Explain how you know.

No: 4 and 6 still share a factor of 2

HCF of 20 and 30 is 10

Answer No, $10(2x + 3)$