

Name:

Exam Style Questions

Expanding Two Brackets

Equipment needed: Calculator, pen

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

Video 14



Answers and Video Solutions



1. Expand and simplify $(y + 3)(y + 5)$



$$y^2 + 5y + 3y + 15$$

$$y^2 + 8y + 15$$

$$\frac{y^2 + 8y + 15}{(2)}$$

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



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

$$x^2 + 4x - 5$$

$$\frac{x^2 + 4x - 5}{(2)}$$

3. Expand and simplify $(w - 2)(w - 7)$



$$w^2 - 7w - 2w + 14$$

$$w^2 - 9w + 14$$

$$\frac{w^2 - 9w + 14}{(2)}$$

4. Expand and simplify $(x - 10)(x + 3)$



$$x^2 + 3x - 10x - 30$$

$$x^2 - 7x - 30$$

$$\frac{x^2 - 7x - 30}{(2)}$$

5. Expand and simplify $(x - 4)(x + 6)$



$$x^2 + 6x - 4x - 24$$

$$x^2 + 2x - 24$$

$$\frac{x^2 + 2x - 24}{\dots\dots\dots}$$

(2)

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



$$x^2 + 3x - 3x - 9$$

$$x^2 - 9$$

$$\frac{x^2 - 9}{\dots\dots\dots}$$

(2)

7. Expand and simplify $(x - 7)^2$



$$(x - 7)(x - 7)$$

$$x^2 - 7x - 7x + 49$$

$$x^2 - 14x + 49$$

$$\frac{x^2 - 14x + 49}{\dots\dots\dots}$$

(2)

8. Expand and simplify $(2y + 1)(y + 3)$



$$2y^2 + 6y + y + 3$$

$$2y^2 + 7y + 3$$

$$\frac{2y^2 + 7y + 3}{\dots\dots\dots}$$

(2)

9. Expand and simplify $(4x + 1)(3x - 5)$



$$12x^2 - 20x + 3x - 5$$

$$12x^2 - 17x - 5$$

$$\frac{12x^2 - 17x - 5}{(2)}$$

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



$$6x^2 + 9x - 4x - 6$$

$$6x^2 + 5x - 6$$

$$\frac{6x^2 + 5x - 6}{(2)}$$

11. Expand and simplify $(5y - 1)(y - 2)$



$$5y^2 - 10y - y + 2$$

$$5y^2 - 11y + 2$$

$$\frac{5y^2 - 11y + 2}{(2)}$$

12. Expand and simplify $(7x - 20)(9x - 10)$



$$63x^2 - 70x - 180x + 200$$

$$63x^2 - 250x + 200$$

$$\frac{63x^2 - 250x + 200}{(2)}$$

13. Expand and simplify $(2x + 5)^2$



$$(2x + 5)(2x + 5)$$

$$4x^2 + 10x + 10x + 25$$

$$4x^2 + 20x + 25$$

$$\frac{4x^2 + 20x + 25}{(2)}$$

14. Expand and simplify $(4x - 3)^2$



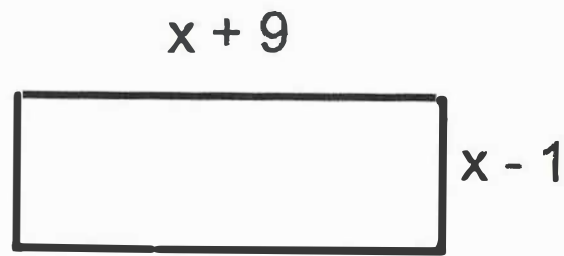
$$(4x - 3)(4x - 3)$$

$$16x^2 - 12x - 12x + 9$$

$$16x^2 - 24x + 9$$

$$\frac{16x^2 - 24x + 9}{(2)}$$

15. A rectangle is shown below.



The length of the rectangle is $x + 9$ cm.

The width of the rectangle is $x - 1$ cm.

Form an expression for the area of the rectangle.

$$(x + 9)(x - 1)$$

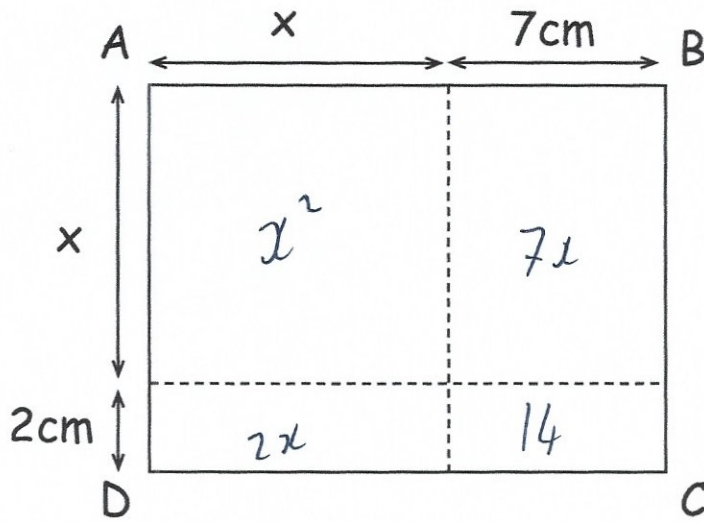
$$x^2 - x + 9x - 9$$

$$x^2 + 8x - 9$$

$$x^2 + 8x - 9$$

(3)

16. Rectangle ABCD is shown below.



The area rectangle ABCD is 230cm^2

Show that $x^2 + 9x = 216$ $(x+7)(x+2)$

$$x^2 + 7x + 2x + 14 = 230$$

$$x^2 + 9x + 14 = 230$$

$$x^2 + 9x = 216$$

(4)

17. Expand and simplify $(3 + g)(5 - g)$



$$15 - 3g + 5g - g^2$$

$$15 + 2g - g^2$$

$$\frac{15 + 2g - g^2}{(2)}$$

18. Micah correctly expands and simplifies $(2x + 11)(x - 3)$



Circle the term that is part of his answer

$8x$

$-5x$

$5x$

$-8x$

$$2x^2 - 6x + 11x - 33$$

$$2x^2 + 5x - 33$$

(1)

19. Expand and simplify $(y^2 + y)(y + 3)$



$$y^3 + 3y^2 + y^2 + 3y$$

$$y^3 + 4y^2 + 3y$$

$$y^3 + 4y^2 + 3y$$

(2)

20. Expand and simplify $(w + 3)(w + 4) + (w + 2)(w + 7)$



$$w^2 + 4w + 3w + 12$$

$$w^2 + 7w + 12$$

$$w^2 + 7w + 2w + 14$$

$$w^2 + 9w + 14$$

$$2w^2 + 16w + 26$$

$$2w^2 + 16w + 26$$

(3)

21. Expand and simplify $(3y - 5)(y + 4) - (y - 3)(y - 5)$



$$3y^2 + 12y - 5y - 20 \quad y^2 - 5y - 3y + 15$$

$$3y^2 + 7y - 20 - (y^2 - 8y + 15)$$

$$\frac{2y^2 + 15y - 35}{(3)}$$

22. Expand and simplify $(4y^2 + 5)(2y + 1) - 3y(y^2 - 6)$



$$8y^3 + 4y^2 + 10y + 5 - 3y^3 + 18y$$

$$5y^3 + 4y^2 + 28y + 5$$

$$\frac{5y^3 + 4y^2 + 28y + 5}{(4)}$$

23. $(x + c)(x + d) \equiv x^2 + px + 72$



c is twice the value of d

Find two possible values of p

$$x^2 + dx + cx + cd \equiv x^2 + px + 72$$

$$cd = 72$$

$$c = 12 \quad d = 6$$

$$c = -12 \quad d = -6$$

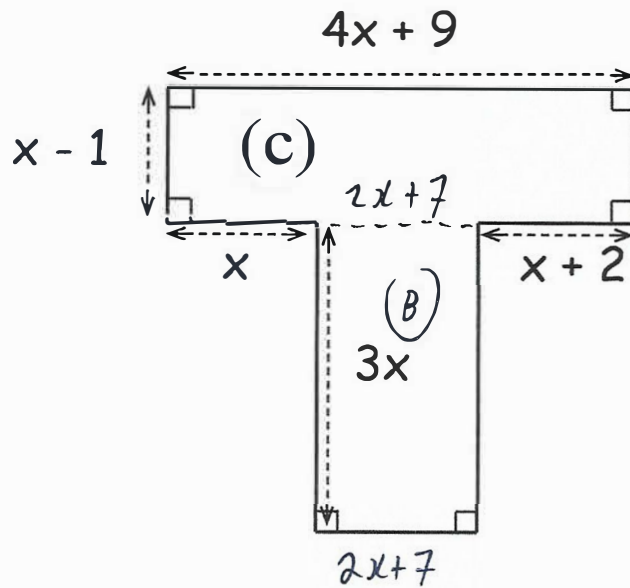
$$(x + 12)(x + 6) = x^2 + 6x + 12x + 72$$
$$x^2 + 18x + 72$$

$$(x - 12)(x - 6) = x^2 - 6x - 12x + 72$$
$$= x^2 - 18x + 72$$

$$p = \dots 18 \dots \text{ or } p = \dots -18 \dots$$

(3)

24.



The area of the shape shown above is A .

Show that $A = 10x^2 + 26x - 9$

$$\begin{aligned} \text{(C)} \quad (4x+9)(x-1) &= 4x^2 - 4x + 9x - 9 \\ &= 4x^2 + 5x - 9 \end{aligned}$$

$$\text{(B)} \quad 3x(2x+7) = 6x^2 + 21x$$

$$\text{(C)} + \text{(B)} = 10x^2 + 26x - 9$$

Total Area = A

$$A = 10x^2 + 26x - 9$$

(4)