



Aberdare Community School  
Mathematics Department

WJEC GCSE

**Higher – Calculator**

Algebra

# **Factorise**

Name: .....

Set: .....

Date: .....

Teacher: .....

12. (a) Factorise the expression  $x^2 - 9x - 10$  and hence solve the equation  $x^2 - 9x - 10 = 0$ .

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[3]

- (d) Factorise  $x^2 - 9$ .

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[1]

4.

(c) (i) Factorise  $2x^2 - 6x$ .

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(ii) Factorise  $3a - 12$ .

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[3]

4.

(b) Factorise  $7a + 21$ .

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[1]

7.

(b) Factorise  $6x^2 - 18x$ .

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[2]

13.

(c) Factorise  $4x^2 - 4$ .

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19. (a) Factorise the expression  $8x^2 - 26x - 7$  and hence solve the equation  $8x^2 - 26x - 7 = 0$ .

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16. (a) Factorise

(i)  $14x^2 - 13x + 3$ .

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(ii)  $81x^2 - 16$ .

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12.

(c) Factorise  $8a^2 + 16ab$ .

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11.

(c) Factorise  $a^3 + 4a^2$ .

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[1]

11. The dimensions of a rectangle are:

$$\begin{array}{l} \text{Length } (x + 5) \text{ cm} \\ \text{Width } (x - 2) \text{ cm} \end{array}$$

The area of the rectangle is  $120 \text{ cm}^2$ .  
Find the value of  $x$ .

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13. (a) Factorise  $6x^2 + 18xy$ .

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(c) Factorise  $x^2 - 25$ .

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**11.**

(b) Factorise  $x^2 - 7x + 10$ .

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[2]

12. (a) Factorise the expression  $x^2 - 9x - 10$  and hence solve the equation  $x^2 - 9x - 10 = 0$ .

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- (d) Factorise  $x^2 - 9$ .

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[1]

4.

(c) (i) Factorise  $2x^2 - 6x$ .

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(ii) Factorise  $3a - 12$ .

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[3]

3.

(b) Factorise  $8x + 16$ .

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10.

(c) Factorise  $x^2 - 10x + 21$  and hence solve  $x^2 - 10x + 21 = 0$ .

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4.

(b) Factorise  $12y + 36$ .

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(b) Factorise  $14y + 35$ .

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14.

(b) Factorise  $(x + 4)^2 - 3(x + 4)$ .

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[2]

10.

(c) Factorise  $x^2 - 11x + 10$ .

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(d) Factorise  $4(x + 2)^2 + 2(x + 2)$ .

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2.

(b) Factorise  $x^2 - 5x$ .

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(c) Factorise  $240y - 360$ .

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(b) Factorise  $4x^2 - 169$ .

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11.

(b) The volume of a pyramid is one third of the area of the base multiplied by the vertical height.

A pyramid has a rectangular base with length  $(3x + 1)$  cm and width  $x$  cm and a vertical height of 24 cm. The volume of the pyramid is  $192 \text{ cm}^3$ .

Find the dimensions of the base of the pyramid.

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4. (a) Factorise  $15x^2 - 45x$ .

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8. (a) Factorise  $5x^2 - 10x$ .

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[2]

11. (a) Factorise  $x^2 - 5x - 14$ .

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7. Factorise each of the following expressions.

(a)  $6x^3 - 12x^2$

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(b)  $x^2 - x - 42$

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..... [2]

(c)  $15x^2 + 31x + 14$

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15. (a) By factorising, solve the following quadratic equation.

$$8x^2 + 18x - 5 = 0$$

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5.

(b) Factorise  $7x + 49$ .

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(c) Factorise  $x^2 - 10x$ .

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8. (a) Factorise  $6x^2 + 5x - 25$ .

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[2]



3. (a) Factorise  $12x^2 - 48x$ .

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[2]





14. Factorise the expression  $3x^2 - 37x + 12$  and hence solve the equation  $3x^2 - 37x + 12 = 0$ .

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Examiner  
only

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1. (a) Factorise  $x^2 - 6x$ .

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15.

- (b) Factorise the expression  $5x^2 + 22x - 15$  and hence solve the equation  $5x^2 + 22x - 15 = 0$ .

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1. (a) Factorise  $12y + 20y^2$ .

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10. (a) Factorise and hence solve  $x^2 - 4x - 12 = 0$ .

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(b) Factorise the expression  $18 - 9y$ .

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15. (a) Factorise the expression  $9a^3b + 6a^2$ .

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(b) Factorise the expression  $x^2 + 8x - 20$ , and hence solve the equation  $x^2 + 8x - 20 = 0$ .

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