

Name: _____

GCSE (1 – 9)

Solving Quadratics by Factorising

Instructions

- Use **black** ink or ball-point pen.
- Answer all Questions.
- Answer the Questions in the spaces provided
– *there may be more space than you need.*
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

Information

- The marks for each Question are shown in brackets
– *use this as a guide as to how much time to spend on each Question.*

Advice

- Read each Question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every Question.
- Check your answers if you have time at the end

1 (a) Factorise $a^2 + 3a - 28$

28
1 28
2 14
4 7

(b) Solve $a^2 + 3a - 28 = 0$

$$\frac{(a+7)(a-4)}{(2)}$$

$$\frac{a = -7 \text{ or } a = 4}{(1)}$$

(Total for Question 1 is 3 marks)

2 (a) Factorise $x^2 - 7x + 10$

10
1 10
2 5

(b) Solve $x^2 - 7x + 10 = 0$

$$\frac{(x-2)(x-5)}{(2)}$$

$$\frac{x = 2 \text{ or } x = 5}{(1)}$$

(Total for Question 2 is 3 marks)

3 (a) Factorise $b^2 + 9b + 20$

20
1 20
2 10
4 5

(b) Solve $b^2 + 9b + 20 = 0$

$$\frac{(b + 4)(b + 5)}{(2)}$$

$$\frac{b = -4 \text{ or } b = -5}{(1)}$$

(Total for Question 3 is 3 marks)

4 (a) Factorise $x^2 - 3x - 18$

18
1 18
2 9
3 6

(b) Solve $x^2 - 3x - 18 = 0$

$$\frac{(x + 3)(x - 6)}{(2)}$$

$$\frac{x = -3 \text{ or } x = 6}{(1)}$$

(Total for Question 4 is 3 marks)

5 (a) Factorise $y^2 - 10y + 9$

9
1 9
3 3

(b) Solve $y^2 - 10y + 9 = 0$

$$\frac{(y-1)(y-9)}{(2)}$$

$$\frac{y=1 \text{ or } y=9}{(1)}$$

(Total for Question 5 is 3 marks)

6 (a) Factorise $a^2 - a - 56$

56
1 56
2 28
4 14
7 8

(b) Solve $a^2 - a - 56 = 0$

$$\frac{(a+7)(a-8)}{(2)}$$

$$\frac{a=-7 \text{ or } a=8}{(1)}$$

(Total for Question 6 is 3 marks)

7 Solve $x^2 + 14x + 24 = 0$

24
1 24
2 12
3 8
4 6

$$(x + 2)(x + 12) = 0$$

$$x = -2 \quad x = -12$$

$$\underline{x = -2 \text{ or } x = -12}$$

(Total for Question 7 is 3 marks)

8 Solve $x^2 + 5x - 6 = 0$

6
1 6
2 3

$$(x - 1)(x + 6) = 0$$

$$x = 1 \quad x = -6$$

$$\underline{x = 1 \text{ or } x = -6}$$

(Total for Question 8 is 3 marks)

9 Solve $x^2 + 5x + 6 = 0$

$$(x + 2)(x + 3) = 0$$

$$x = -2 \quad x = -3$$

$$\underline{x = -2 \text{ or } x = -3}$$

(Total for Question 9 is 3 marks)

10 Solve $x^2 - 12x + 32 = 0$

32

1 32

2 16

4 8

$$(x - 4)(x - 8) = 0$$

$$x = 4 \quad x = 8$$

$$\underline{x = 4 \text{ or } x = 8}$$

(Total for Question 10 is 3 marks)

11 Solve $x^2 + 19x + 90 = 0$

90

1 90

2 45

3 30

5 18

6 15

9 10

$$(x + 9)(x + 10) = 0$$

$$x = -9 \quad x = -10$$

$$\underline{x = -9 \text{ or } x = -10}$$

(Total for Question 11 is 3 marks)

12 Solve $x^2 + 11x - 42 = 0$

42

1 42

2 21

3 14

6 7

$$(x - 3)(x + 14) = 0$$

$$x = 3 \quad x = -14$$

$$\underline{x = 3 \text{ or } x = -14}$$

(Total for Question 12 is 3 marks)

13 Solve $a^2 - 10a + 16 = 0$

16
1 16
2 8
4 4

$$(a - 2)(a - 8) = 0$$

$$a = 2 \quad a = 8$$

$$a = 2 \text{ or } a = 8$$

(Total for Question 13 is 3 marks)

14 Solve $y^2 - 2y - 35 = 0$

35
1 35
5 7

$$(y + 5)(y - 7) = 0$$

$$y = -5 \quad y = 7$$

$$y = -5 \text{ or } y = 7$$

(Total for Question 14 is 3 marks)

15 Solve $x^2 + 3x - 54 = 0$

54
1 54
2 27
3 18
6 9

$$(x + 9)(x - 6) = 0$$

$$x = -9 \quad x = 6$$

$$x = -9 \text{ or } x = 6$$

(Total for Question 15 is 3 marks)

16 Solve $b^2 - 10b - 24 = 0$

	24
1	24
2	12
3	8
4	6

$$(b + 2)(b - 12) = 0$$

$$b = -2 \quad b = 12$$

$$\underline{b = -2 \text{ or } b = 12}$$

(Total for Question 16 is 3 marks)

17 Solve $m^2 + 13m + 40 = 0$

	40
1	40
2	20
4	10
5	8

$$(m + 5)(m + 8) = 0$$

$$m = -5 \quad m = -8$$

$$\underline{m = -5 \text{ or } m = -8}$$

(Total for Question 17 is 3 marks)

18 Solve $x^2 + 10x - 24 = 0$

	24
1	24
2	12
3	8
4	6

$$(x + 12)(x - 2) = 0$$

$$x = -12 \quad x = 2$$

$$\underline{x = -12 \text{ or } x = 2}$$

(Total for Question 18 is 3 marks)