

Quadratic Formula

Question Paper

Level	GCSE
Subject	Maths
Exam Board	Edexcel GCSE
Topic	Quadratic Formula
Grade Level	Grade 7
Booklet	Question Paper

Time Allowed: 51 minutes

Score: /42

Percentage: /100

Grade Boundaries:

1. Solve $3x^2 + 7x - 13 = 0$
Give your solutions correct to 2 decimal places.

$x = \dots\dots\dots$ or $x = \dots\dots\dots$

(3 marks)

2. Solve the equation

$$2x^2 + 6x - 95 = 0$$

Give your solutions correct to 3 significant figures.

$x = \dots\dots\dots$ or $x = \dots\dots\dots$

(3 marks)

3. Solve $x^2 + 3x - 5 = 0$
Give your solutions correct to 4 significant figures.

.....

(3 marks)

4. Solve this quadratic equation.

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

Give your answers correct to 3 significant figures.

$x = \dots\dots\dots$ or $x = \dots\dots\dots$

(3 marks)

5. (a) Solve $x^2 - 2x - 1 = 0$

Give your solutions correct to 2 decimal places.

.....

(3)

(b) Write down the solutions, correct to 2 decimal places, of $3x^2 - 6x - 3 = 0$

.....

(2)

(5 marks)

6. (a) Solve $x^2 + x + 11 = 14$
Give your solutions correct to 3 significant figures.

.....

(3)

$$y = x^2 + x + 11$$

The value of y is a prime number when $x = 0, 1, 2$ and 3

The following statement is **not** true.

' $y = x^2 + x + 11$ is **always** a prime number when x is an integer'

- (b) Show that the statement is not true.

.....
.....

(2)

(5 marks)

7. The diagram below shows a 6-sided shape.
 All the corners are right angles.
 All the measurements are given in centimetres.

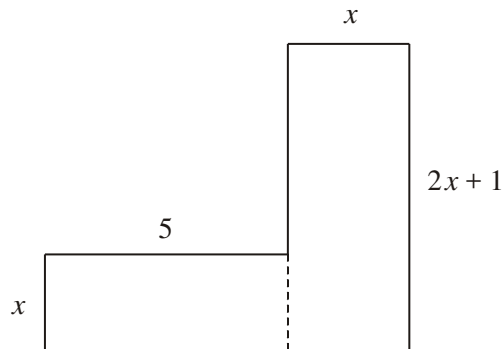


Diagram **NOT** accurately drawn

The area of the shape is 95 cm^2 .

(a) Show that $2x^2 + 6x - 95 = 0$

(3)

(b) Solve the equation

$$2x^2 + 6x - 95 = 0$$

Give your solutions correct to 3 significant figures.

$x = \dots\dots\dots$ Or $x = \dots\dots\dots$

(3)

(6 marks)

8. The diagram below shows a 6-sided shape.
 All the corners are right angles.
 All measurements are given in centimetres.

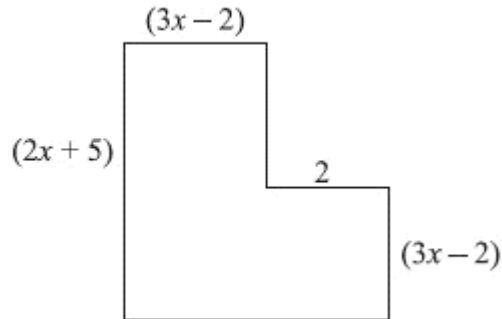


Diagram **NOT** accurately drawn

The area of the shape is 25 cm^2 .

(a) Show that $6x^2 + 17x - 39 = 0$

(3)

(b) (i) Solve the equation

$$6x^2 + 17x - 39 = 0$$

$$x = \dots\dots\dots \text{ or } x = \dots\dots\dots$$

(ii) Hence work out the length of the longest side of the shape.

.....cm

(4)

(7 marks)

9. The diagram shows a 6-sided shape.
 All the corners are right angles.
 All the measurements are given in centimetres.

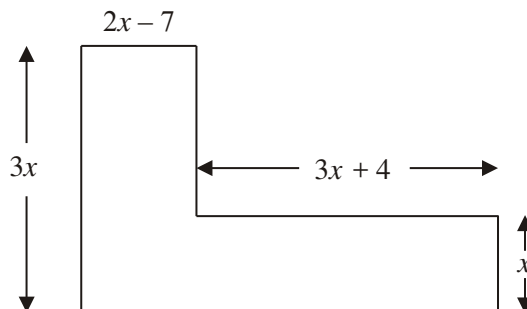


Diagram NOT accurately drawn

The area of the shape is 85 cm^2 .

(a) Show that $9x^2 - 17x - 85 = 0$

(3)

(b) (i) Solve $9x^2 - 17x - 85 = 0$

Give your solutions correct to 3 significant figures.

$x = \dots\dots\dots$ or $x = \dots\dots\dots$

(ii) Hence, work out the length of the shortest side of the 6-sided shape.

$\dots\dots\dots \text{ cm}$

(4)

(7 marks)