Name: _____

GCSE (1 – 9)

Quadratic Formula

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 Solve $x^2 + 5x + 3 = 0$

Give your solutions correct to 2 decimal places.

…….....…….....

(Total for question 1 is 3 marks)

2 Solve $2x^2 + 13x + 7 = 0$

Give your solutions correct to 2 decimal places.

…….....…….....

(Total for question 2 is 3 marks)

3 Solve $3x^2 + 2x - 13 = 0$

Give your solutions correct to 1 decimal place.

…….....…….....

(Total for question 3 is 3 marks)

4 Solve $5x^2 + x - 11 = 0$

Give your solutions correct to 3 significant figures.

…….....…….....

(Total for question 4 is 3 marks)

5 Solve $3x^2 - 11x - 13 = 0$

Give your solutions correct to 3 significant figures.

…….....…….....

(Total for question 5 is 3 marks)

6 Solve $5x^2 = 6x + 3$

Give your solutions correct to 3 significant figures.

…….....…….....

(Total for question 6 is 3 marks)

7 Solve $x^2 + 2x - 7 = 0$

Give your answers in the form $a \pm b\sqrt{c}$.

…….....…….....

(Total for question 7 is 4 marks)

8 Solve $x^2 - 4x - 1 = 0$

Give your answers in the form $a \pm \sqrt{b}$.

…….....…….....

(Total for question 8 is 4 marks)

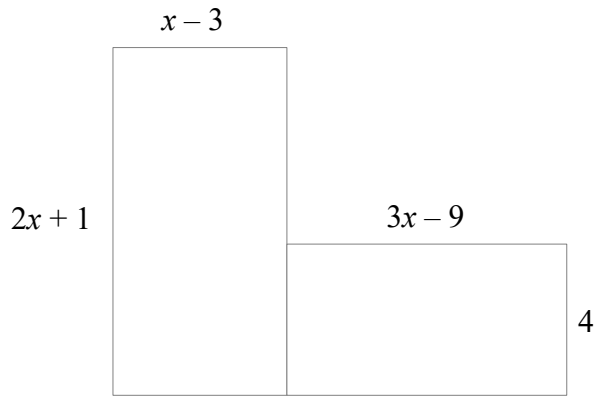
9 Solve $x^2 + 6x - 11 = 0$

Give your answers in the form $a \pm b\sqrt{c}$.

…….....…….....

(Total for question 9 is 4 marks)

10 The diagram shows a six sided shape formed from two rectangles.
All measurements are given in centimetres.



The area of the shape is 24cm^2

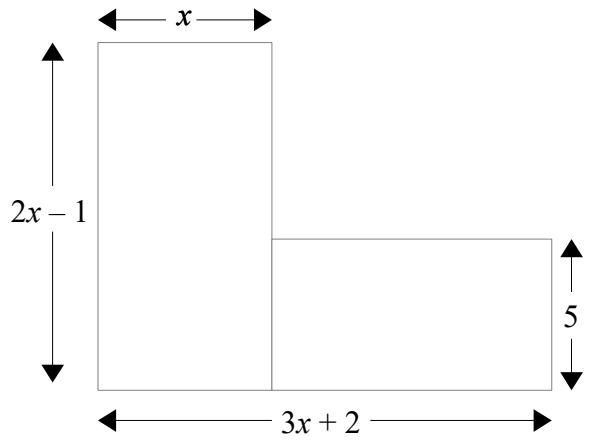
(a) Show that $2x^2 + 7x - 63 = 0$

(b) Find the value of x (2)
Give your answer to 3 significant figures

…..... (3)

(Total for question 10 is 5 marks)

11 The diagram shows a six sided shape formed from two rectangles.
All measurements are given in centimetres.



The area of the shape is 35cm^2

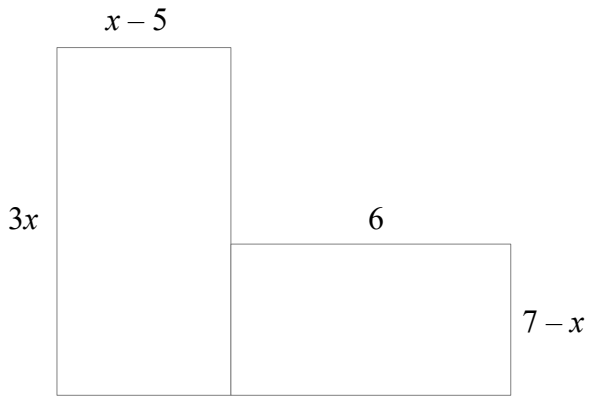
(a) Show that $2x^2 + 9x - 25 = 0$

(b) Find the value of x (2)
Give your answer to 3 significant figures

…..... (3)

(Total for question 11 is 5 marks)

12 The diagram shows a six sided shape formed from two rectangles.
All measurements are given in centimetres.



The area of the shape is 26cm^2

(a) Show that $3x^2 - 21x + 16 = 0$

(b) Find the value of x
Give your answer to 3 significant figures

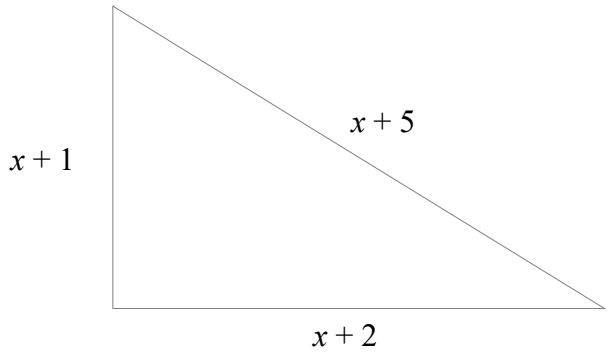
(2)

…….....

(3)

(Total for question 12 is 5 marks)

13 The diagram shows a right angled triangle.
All measurements are given in centimetres.



(a) Show that $x^2 - 4x - 20 = 0$

(b) Find the value of x (3)

Give your answer in the form $a \pm b\sqrt{c}$.

…..... (3)

(Total for question 13 is 6 marks)