Name: _____

ASM Tuition Academy

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 you're 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 time.
- Try to answer every question.
- Check your answers if you have time at the end.

1. Solve $x^2 + 5x + 4 = 0$

   Give your solutions correct to 2 decimal places

(Total for question 1 is 3 marks)

2. Solve $2x^2 + 13x + 8 = 0$

   Give your solutions correct to 2 decimal places.

(Total for question 2 is 3 marks)

3. Solve $3x^2 + 2x - 14 = 0$

   Give your solutions correct to 1 decimal place

(Total for question 3 is 3 marks)

4. Solve $5x^2 + x - 12 = 0$

Give your solutions correct to 3 significant figures

(Total for question 4 is 3 marks)

5. Solve $3x^2 - 11x - 12 = 0$

Give your solutions correct to 3 significant figures

(Total for question 5 is 3 marks)

6. Solve $5x^2 = 6x + 4$

Give your solutions correct to 3 significant figures

(Total for question 6 is 3 marks)

7. Solve $x^2 + 8x - 8 = 0$

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

(Total for question 7 is 4 marks)

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

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

(Total for question 8 is 4 marks)

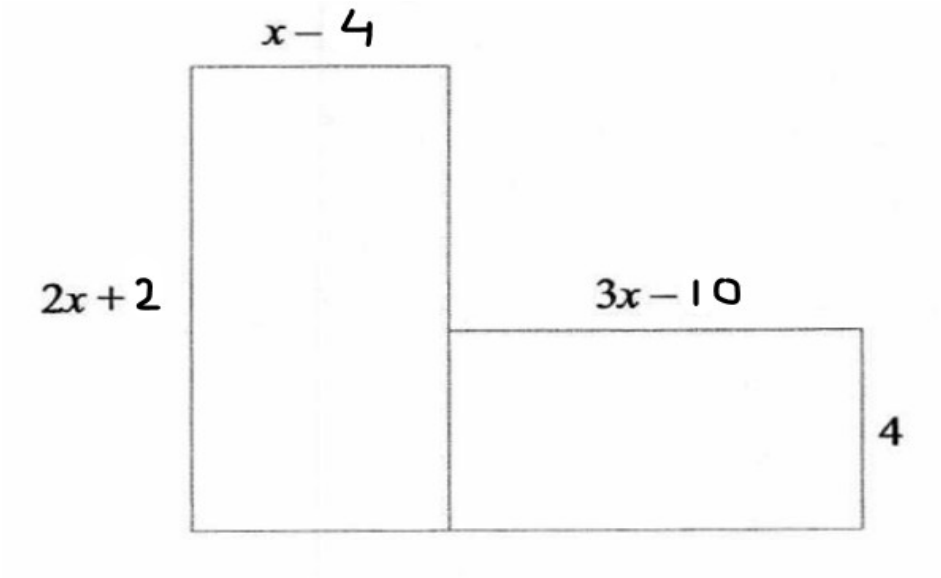
9. Solve $x^2 + 6x - 12 = 0$

   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 25 cm².

(a) Show that $2x^2 + 6x - 73 = 0$

(2)

(b) Find the value of x.

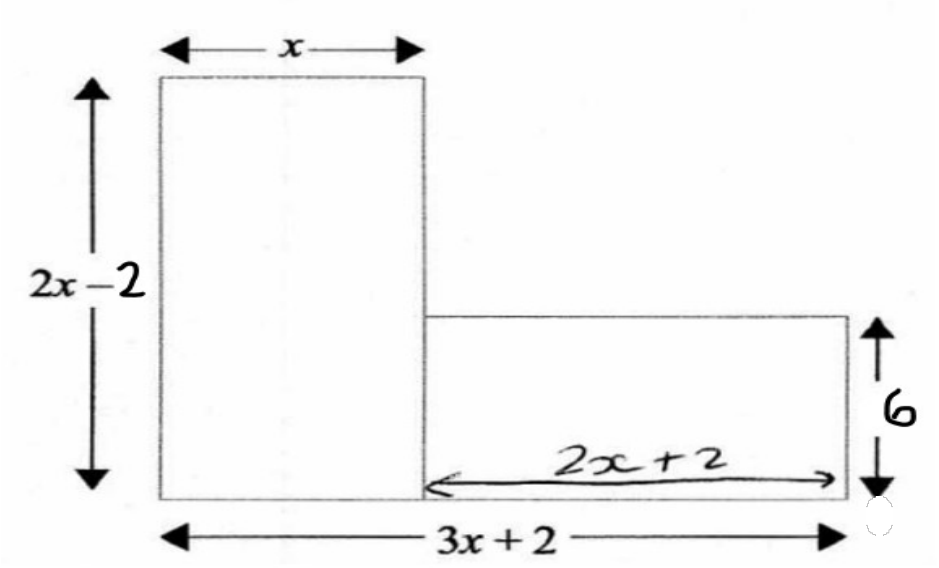
Give your answer to 3 significant figures.

(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 36 cm².

(a) Show that $x^2 + 5x - 12 = 0$

(2)

(b) Find the value of x.

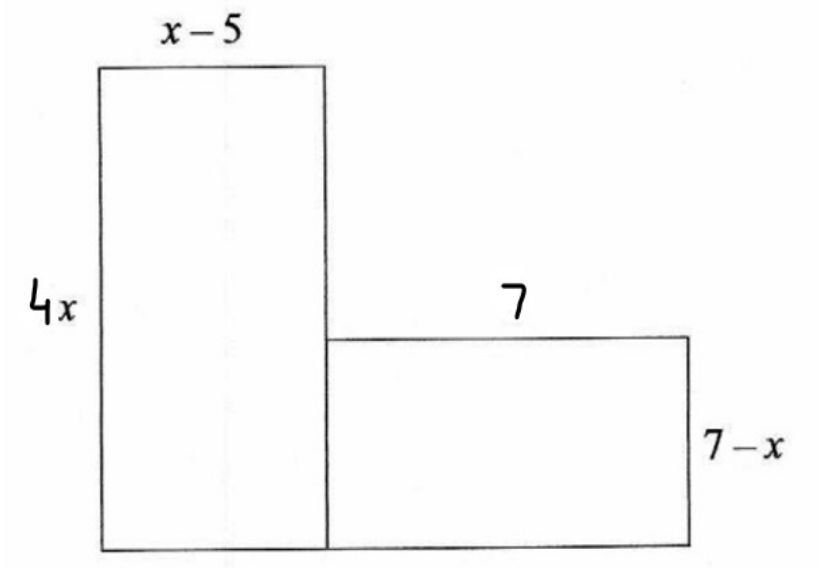
Give your answer to 3 significant figures

(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 28 cm².

(a) Show that $4x^2 - 27x + 21 = 0$

(2)

(b) Find the value of x.

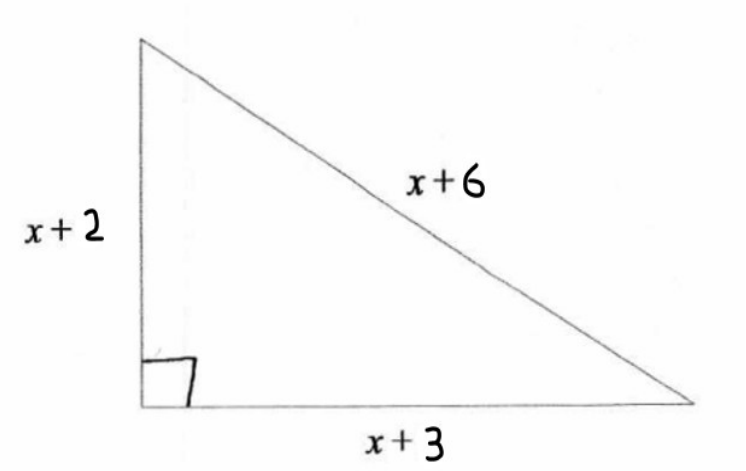
Give your answer to 3 significant figures

(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 $x^2 - 2x - 23 = 0$

(3)

(b) Find the value of x.

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

(3)

(Total for question 13 is 6 marks)