

## A207 Quadratic equations 2

**Q1.**

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

Give your solutions correct to 3 significant figures.

.....  
**(Total for question = 3 marks)**

**Q2.**

Solve  $(x - 2)^2 = 3$

Give your solutions correct to 3 significant figures.

.....  
**(Total for question = 2 marks)**

**Q3.**

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

Write your answer in the form  $a \pm \sqrt{b}$  where  $a$  and  $b$  are integers.

.....  
**(Total for question = 3 marks)**

**Q4.**

(a) Expand and simplify  $(x - 2)(2x + 3)(x + 1)$

.....  
(3)

$$\frac{y^4 \times y^n}{y^2} = y^{-3}$$

(b) Find the value of  $n$ .

.....  
(2)

(c) Solve  $5x^2 - 4x - 3 = 0$

Give your solutions correct to 3 significant figures.

.....  
(3)

**(Total for question = 8 marks)**

**Q5.**

$(x - 8)(x + 4) = (x - a)^2 + b$  for all values of  $x$ .

Find the value of  $a$  and the value of  $b$ .

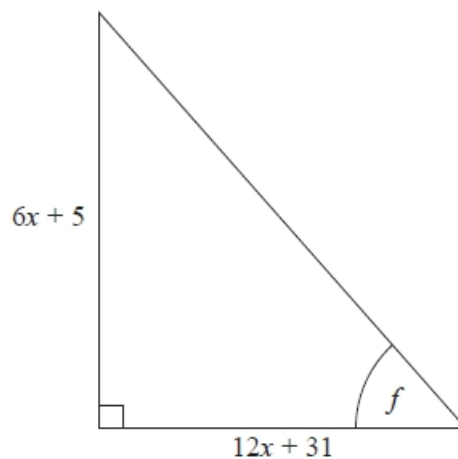
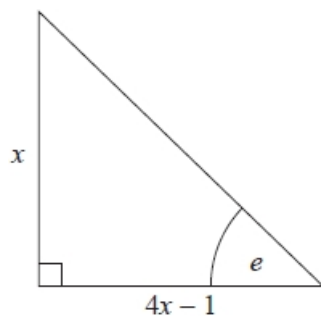
$a = \dots\dots\dots$

$b = \dots\dots\dots$

**(Total for question = 3 marks)**

**Q6.**

Here are two right-angled triangles.



$$\tan e = \tan f$$

Given that

find the value of  $x$ .

You must show all your working.

.....  
**(Total for question = 5 marks)**

**Q7.**

The length of a rectangle is the same as the length of each side of a square.

The length of the rectangle is 4 cm more than 3 times the width of the rectangle.

The area of the square is  $66 \text{ cm}^2$  more than the area of the rectangle.

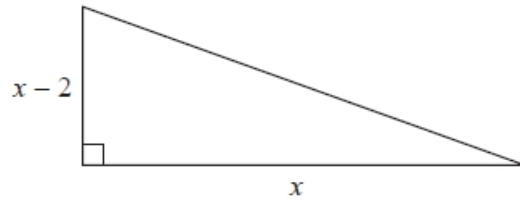
Find the length and the width of the rectangle.

You must show all your working.

.....  
**(Total for question = 6 marks)**

**Q8.**

Here is a right-angled triangle.



All measurements are in centimetres.

The area of the triangle is  $2.5 \text{ cm}^2$ .

Find the perimeter of the triangle.

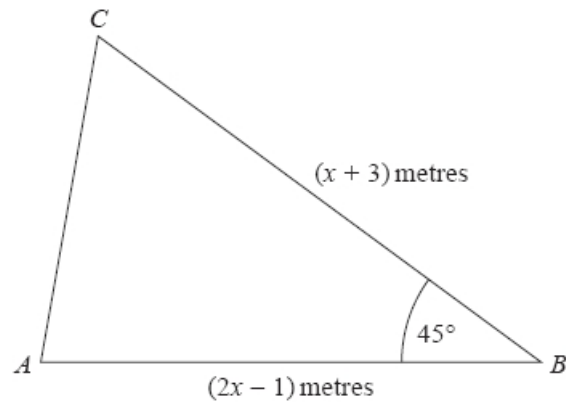
Give your answer correct to 3 significant figures.

You must show all of your working.

..... cm

**(Total for question is 6 marks)**

**Q9.**



The area of triangle  $ABC$  is  $6\sqrt{2} \text{ m}^2$ .

Calculate the value of  $x$ .

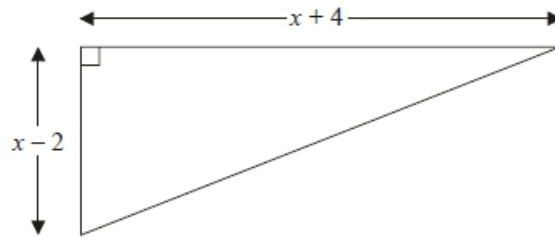
Give your answer correct to 3 significant figures.

.....  
**(Total for question = 5 marks)**



**Q10.**

The diagram shows a right-angled triangle.



All the measurements are in centimetres.

The area of the triangle is  $27.5 \text{ cm}^2$

Work out the length of the shortest side of the triangle.

You must show all your working.

..... cm

**(Total for question = 4 marks)**