A177 Solving quadratics 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.

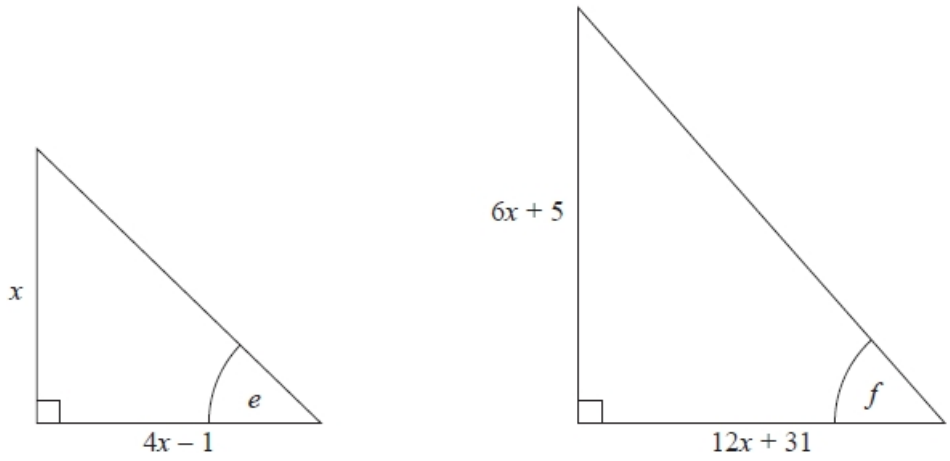
.....

(3)

(Total for question = 8 marks)

Q5.

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)

Q6.

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 cm^2 more than the area of the rectangle.

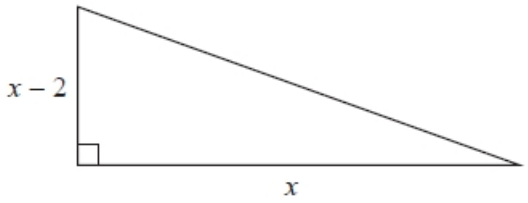
Find the length and the width of the rectangle.
You must show all your working.

.....

(Total for question = 6 marks)

Q7.

Here is a right-angled triangle.



All measurements are in centimetres.
The area of the triangle is 2.5 cm^2.

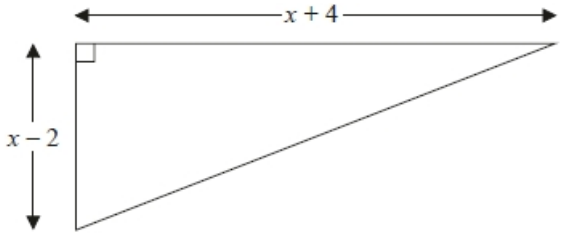
Find the perimeter of the triangle.
Give your answer correct to 3 significant figures.
You must show all of your working.

..... cm

(Total for question is 6 marks)

Q8.

The diagram shows a right-angled triangle.



All the measurements are in centimetres.

The area of the triangle is 27.5 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)

Q9.

The diagram shows a trapezium.

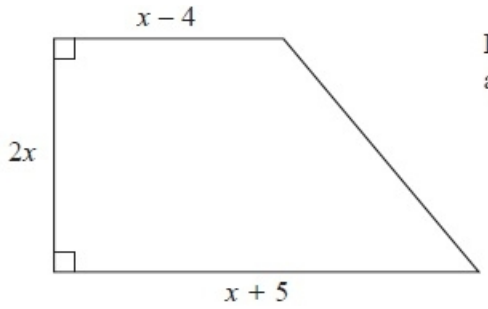


Diagram **NOT** accurately drawn

All the measurements are in centimetres.

The area of the trapezium is 351 cm^2.

(a) Show that $2x^2 + x - 351 = 0$

(2)

(b) Work out the value of x.

.....

(3)

(Total for Question is 5 marks)

Q10.

(a) Solve $3x^2 = 147$

x = ...

(2)

(b) Solve $\frac{y-1}{2} + \frac{y+1}{3} = 15$

y = ...

(3)

(Total for question = 5 marks)