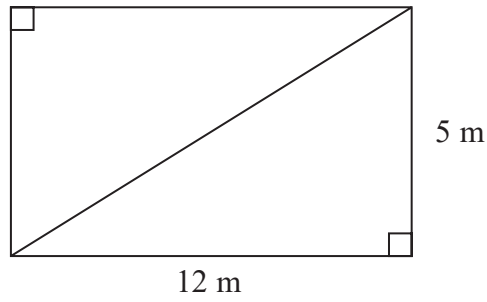**1** This rectangular frame is made from 5 straight pieces of metal.

The weight of the metal is 1.5 kg per metre.

Work out the total weight of the metal in the frame.

.... kg

(Total for Question 1 is 5 marks)

2 A square, with sides of length x cm, is inside a circle.
Each vertex of the square is on the circumference of the circle.

The area of the circle is 49 cm^2.

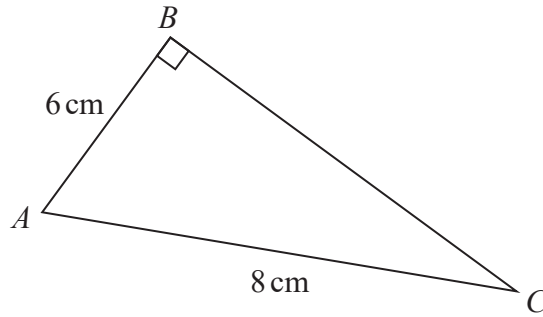Work out the value of x.
Give your answer correct to 3 significant figures.

(Total for Question 2 is 4 marks)

3 *ABC* is a right-angled triangle.

Here is Sarah's method to find the length of *BC*.

$$BC^2 = AB^2 + AC^2$$
$$= 6^2 + 8^2$$
$$= 100$$
$$BC = 10$$

(a) What mistake has Sarah made in her method?

....

....

....

(1)
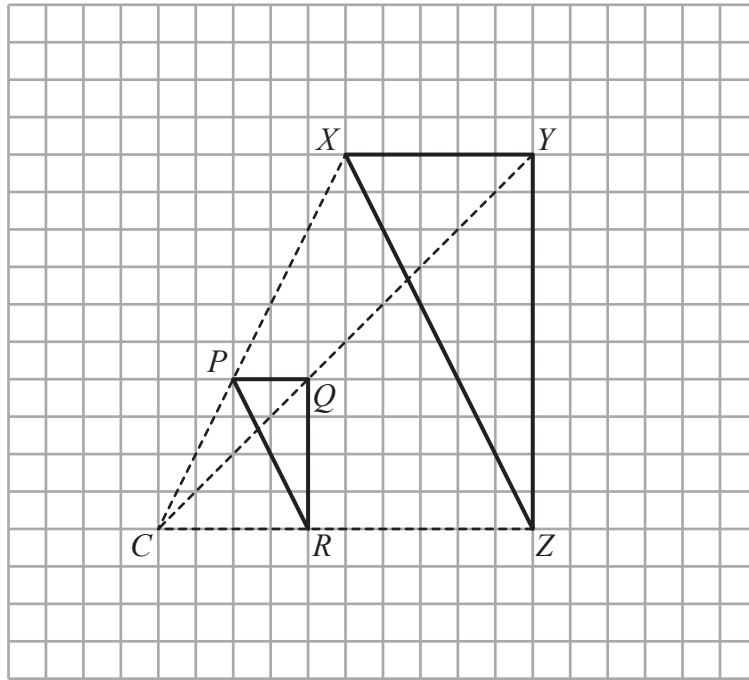
Roy is going to enlarge triangle *PQR* with centre *C* and scale factor $1\frac{1}{2}$

He draws triangle *XYZ*.
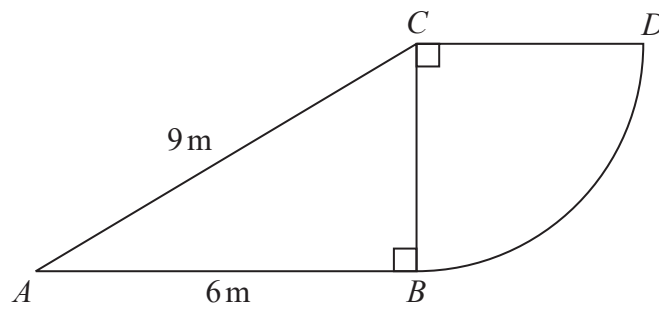
(b) Explain why Roy's diagram is **not** correct.

....

....

....

(1)

(Total for Question 3 is 2 marks)

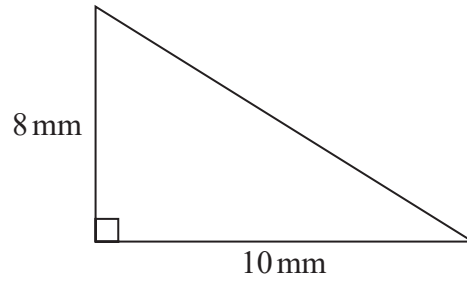**4** The diagram shows a right-angled triangle and a quarter circle.

The right-angled triangle ABC has angle $ABC = 90°$
The quarter circle has centre C and radius CB.

Work out the area of the quarter circle.
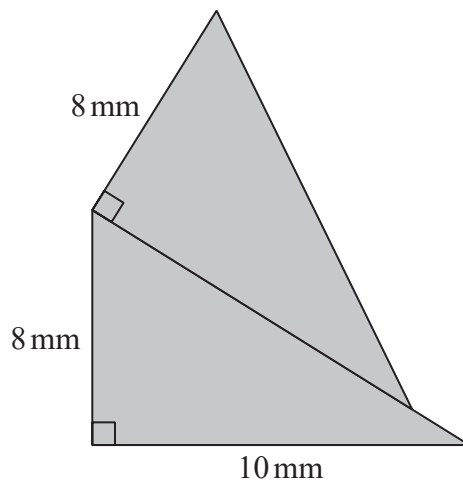Give your answer correct to 3 significant figures.
You must show all your working.

.... m²

(Total for Question 4 is 4 marks)

5 Here is a right-angled triangle.

8 mm

10 mm

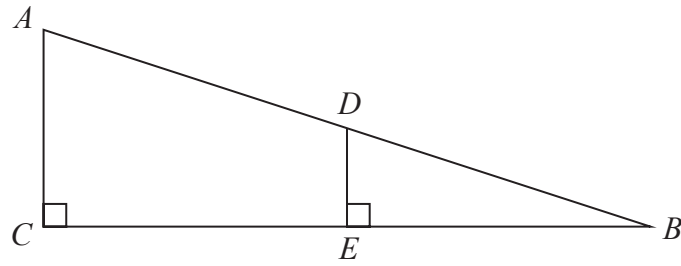The shaded shape below is made from two of these triangles.

8 mm

8 mm

10 mm

Work out the perimeter of the shaded shape.
Give your answer correct to 3 significant figures.

.... mm

(Total for Question 5 is 4 marks)

6 The diagram shows two right-angled triangles *ACB* and *DEB*.

AD = 9 cm
DE = 2 cm
DB = 6 cm

Calculate the length of *CB*.
Give your answer correct to 2 decimal places.

.... cm

(Total for Question 6 is 4 marks)

7   *A* and *B* are points on a centimetre grid.
   A is the point with coordinates $(-7, 6)$
   B is the point with coordinates $(8, -5)$

   Work out the length of *AB*.
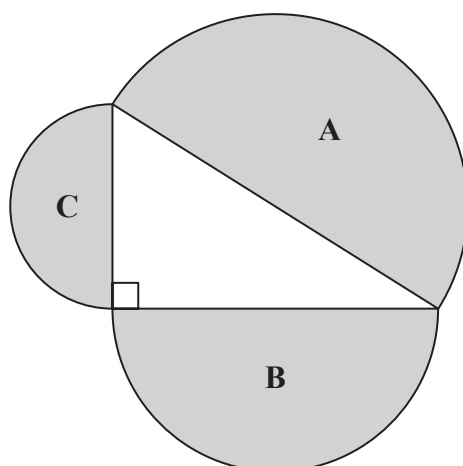   Give your answer correct to 1 decimal place.

.... cm

(Total for Question 7 is 2 marks)

8 A right-angled triangle is formed by the diameters of three semicircular regions, **A**, **B** and **C** as shown in the diagram.
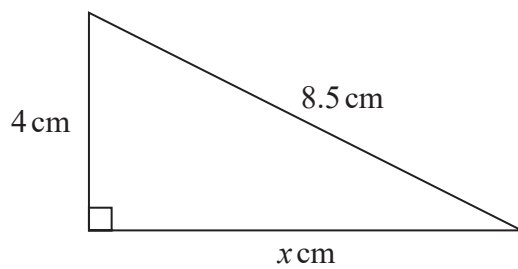
Show that

$$\text{area of region } \mathbf{A} = \text{area of region } \mathbf{B} + \text{area of region } \mathbf{C}$$

(Total for Question 8 is 3 marks)

9   Here is a right-angled triangle.

4 cm

8.5 cm

x cm

Work out the value of x.

$x =$ ....

(Total for Question 9 is 2 marks)