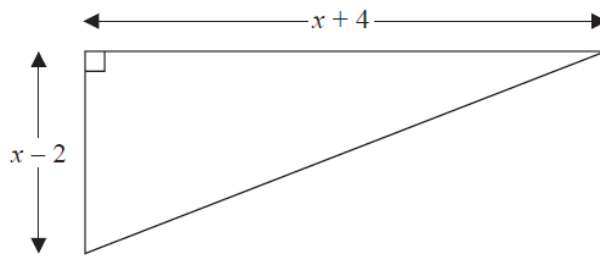


- 1 The diagram shows a right-angled triangle.



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.

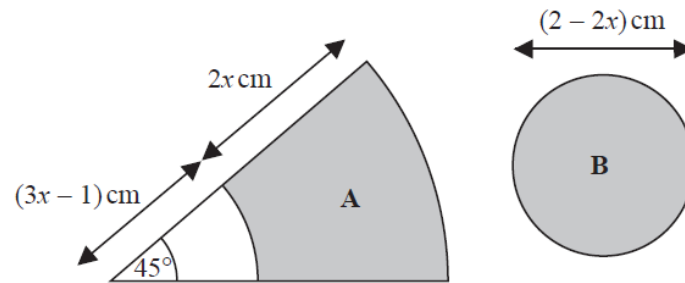
..... cm

(Total for Question is 4 marks)

- 2 The diagram shows two shaded shapes, **A** and **B**.

Shape **A** is formed by removing a sector of a circle with radius  $(3x - 1)$  cm from a sector of the circle with radius  $(5x - 1)$  cm.

Shape **B** is a circle of diameter  $(2 - 2x)$  cm.



The area of shape **A** is equal to the area of shape **B**.

Find the value of  $x$ .

You must show all your working.

.....  
(Total for Question is 5 marks)

**3** Solve  $x^2 = 5x + 24$

.....  
(Total for Question is 3 marks)

**4** The curve **C** has equation  $y = x^2 + 3x - 3$

The line **L** has equation  $y - 5x + 4 = 0$

Show, algebraically, that **C** and **L** have exactly one point in common.

(Total for Question is 4 marks)