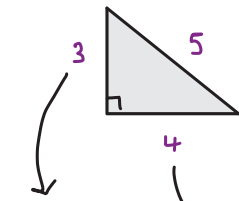


1. The **perimeter** of a **right-angled triangle** is **72 cm**. The lengths of its **sides** are in the ratio **3 : 4 : 5**.

Work out the **area** of the triangle.



$$3 \times 6 = 18 \text{ cm} \quad 4 \times 6 = 24 \text{ cm}$$

$$3 + 4 + 5 = 12$$

$$\frac{72}{12} = 6$$

Side length $\times 6 =$ side length of Δ with 72cm perimeter

perimeter of Δ with side lengths of ratio in its simplest form (3:4:5)

What factor does this ratio need to be scaled up by to give a perimeter of 72cm?

5 must represent the hypotenuse as it is the longest side.

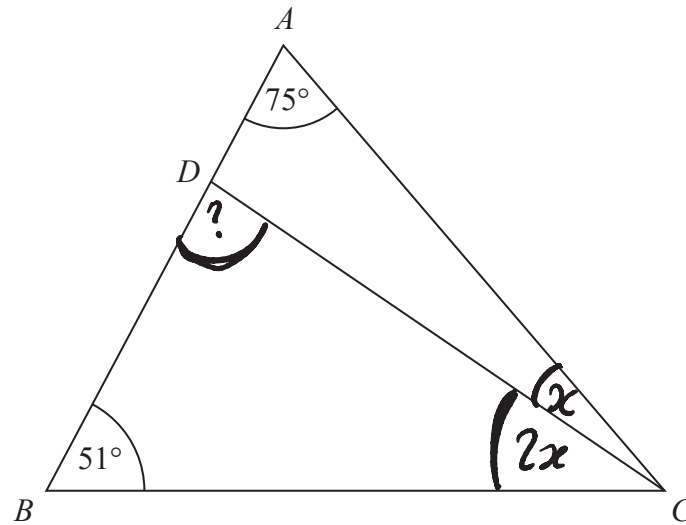
Area of Δ with 72cm perimeter:

$$\begin{aligned} \frac{1}{2} \text{ base} \times \text{height} &= \frac{1}{2} \times 24 \times 18 \\ &= 216 \text{ cm}^2 \end{aligned}$$

.....216.....cm²

(Total for Question is 4 marks)

2. The diagram shows triangle ABC .

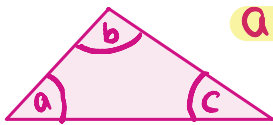


ADB is a straight line.

the size of angle DCB : the size of angle $ACD = 2 : 1$ ✓

Work out the size of angle BDC .

All interior angles of a triangle add to 180°



$$a + b + c = 180$$

$$75 + 51 + 2x + x = 180$$

For Triangle ABC

$$3x = 180 - 75 - 51$$

$$3x = 54 \quad (1)$$

$$x = \frac{54}{3}$$

$$x = 18 \quad (1)$$

For Triangle BCD

$$51 + 2x + ? = 180$$

$$\text{Since } x = 18 \quad (1)$$

$$51 + 2(18) + ? = 180$$

$$? = 180 - 51 - 2(18)$$

$$= 180 - 51 - 36$$

$$= 93$$

(1) 93