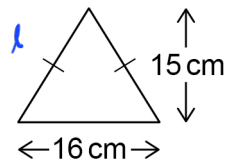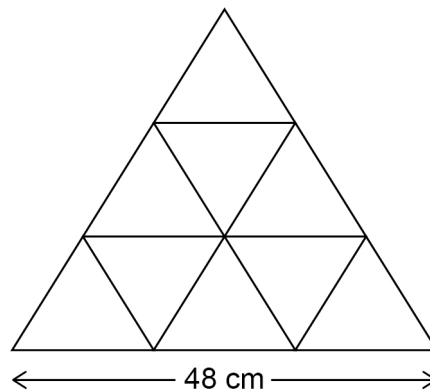**1**   An isosceles triangle has base 16 cm and perpendicular height 15 cm

Not drawn accurately

Some of these triangles are used to make a large triangle.

Not drawn accurately

48 cm

Work out the perimeter of the large triangle.

[4 marks]

$\frac{16}{2} = 8$ ①

By using Pythagoras' Theorem : $l = \sqrt{15^2 + 8^2}$

$= \sqrt{225 + 64}$

$= \sqrt{289}$ ①

$= 17$

Perimeter : $17 + 17 + 17 + 17 + 17 + 17 + 48$ ①

$= 102 + 48$
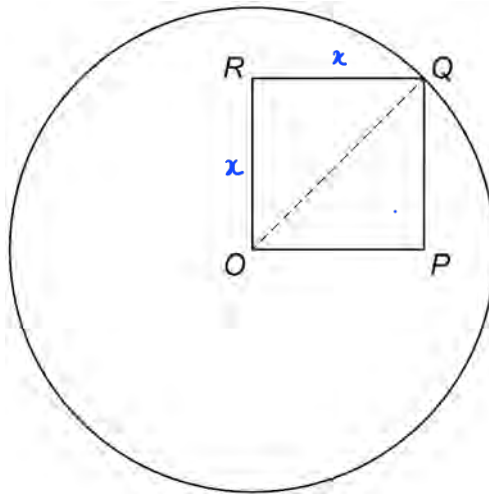
$= 150$ ①

Answer   150   cm

2   A circle, centre *O*, has circumference 20π cm

Q is a point on the circle.

OPQR is a **square**.

Not drawn
accurately

perimeter of the square : circumference of the circle $= \sqrt{a} : \pi$ where *a* is an integer.

Work out the value of *a*.

You **must** show your working.

[4 marks]

$$2 \times \pi \times r = 20\pi$$

$$r = 10 \;①$$

$$OQ = 10$$

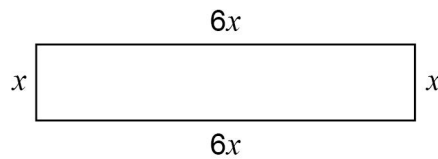$$OQ = \sqrt{x^2 + x^2}$$

$$= \sqrt{2x^2}$$

$$100 = 2x^2$$

$$50 = x^2 \;①$$

$$x = \sqrt{50} = 5\sqrt{2} \;①$$

perimeter of square : circumference of circle $= 20\sqrt{2} : 20\pi$ $\Big) \div 20$

$$\sqrt{2} : \pi$$

$a =$ _____ **2** ① _____

3   The length of this rectangle is 6 times the width.

$6x$

x [rectangle] x

$6x$

Not drawn accurately

Two of these rectangles are joined, with no overlap, to make this L-shape.

x

$6x$ $6x$

$5x$

x [L-shape] x

$6x$
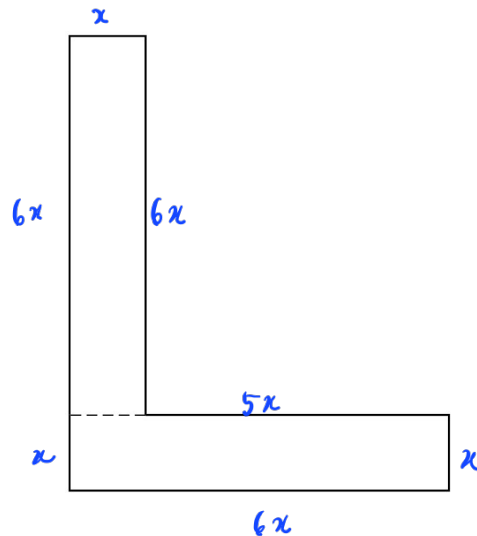
Not drawn accurately

The perimeter of the L-shape is 98.8 cm

Work out the value of the perimeter of **one** of the rectangles.

[4 marks]

$6x + x + 6x + 5x + x + 6x + x = 98.8$

$26x = 98.8$

$x = 98.8 \div 26$

$= 3.8$

Perimeter of one rectangle : $x + x + 6x + 6x$

$= 14x = 14(3.8)$

$= 53.2$

Answer _____ 53.2 _____ cm