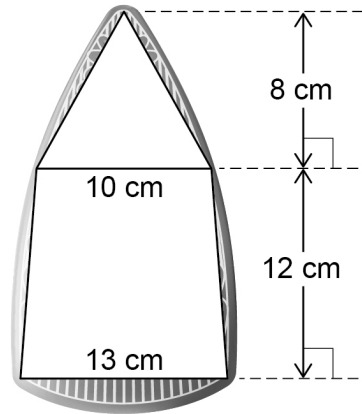


1

Ralf has an iron.

He models the base as a triangle joined to a trapezium.

Not drawn
accurately

- 1 (a) The iron applies a force of 25 newtons (N)

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

Work out the pressure using Ralf's model.

[4 marks]

Answer _____ N/cm²

- 1 (b)** Is the actual pressure greater than, equal to or less than your answer to part (a)?

Tick **one** box.

☐

greater than

☐

equal to

☐

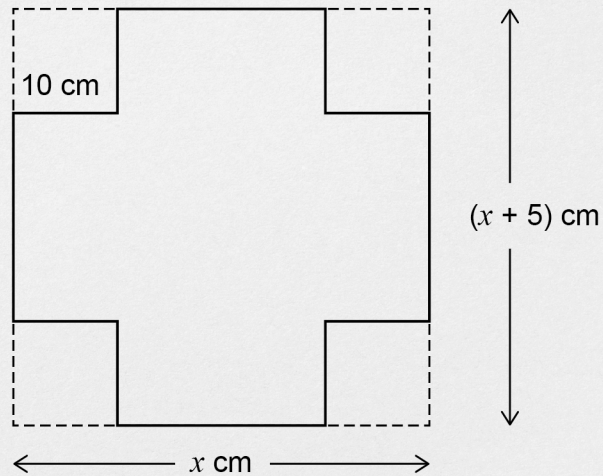
less than

Give a reason for your answer.

[2 marks]

2 Kate has the following question for homework.

The net of a box is made by cutting four squares from a piece of cardboard.
The cardboard is a rectangle with width x cm and length $(x + 5)$ cm
Each square has side length 10 cm
The area of the net is 1000 cm^2
Work out the value of x .



2 (a) Show that Kate can form the equation $x^2 + 5x - 1400 = 0$

[3 marks]

2 (b) Kate correctly factorises the equation to get $(x + 40)(x - 35) = 0$

Her answer to the homework question is $x = -40$ or $x = 35$

Is her answer correct?

Tick a box.

☐

Yes

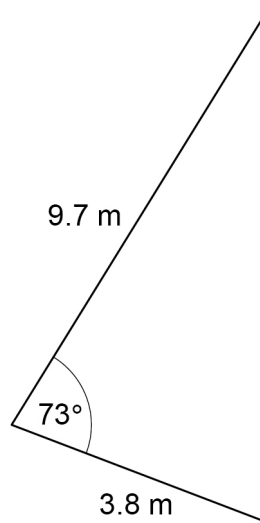
☐

No

Give a reason for your answer.

[1 mark]

- 3 Here is a triangular sail.



Not drawn
accurately

- 3 (a) Vicky needs to buy waterproofing liquid for the sail.

She will put **3 coats** of liquid on **each** side of the sail.

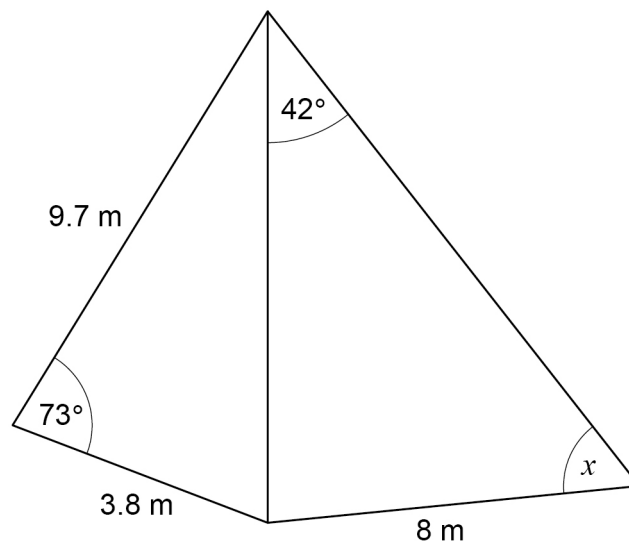
A litre of liquid covers 8.5 square metres of sail.

How many 1-litre bottles of liquid does Vicky need?

[3 marks]

Answer _____

- 3 (b) Another sail is joined to the first sail as shown.



Not drawn
accurately

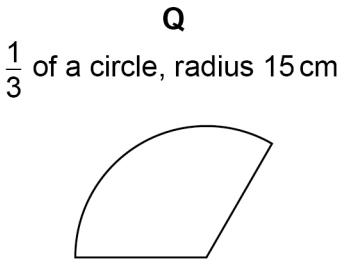
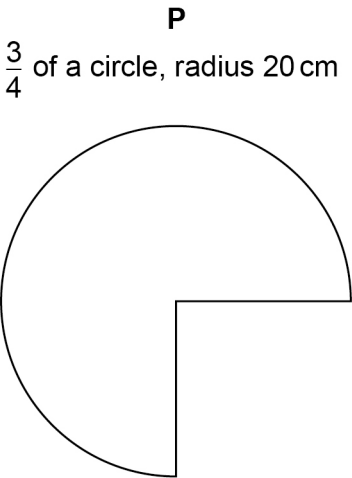
x is an acute angle.

Work out the size of angle x .

[5 marks]

Answer _____ degrees

4 Here are two shapes, P and Q.



Not drawn accurately

How many times bigger is the area of P than the area of Q?
You **must** show your working.

[4 marks]

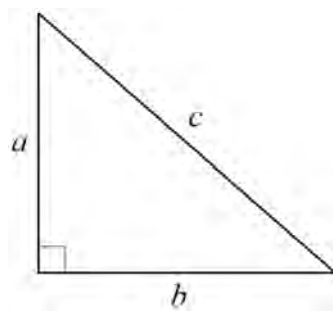
Answer _____

5 To be rented, a bedroom must have a floor area of at least 6.51 m^2

A bedroom has a rectangular floor.
The floor measures 2.4 m by 2.9 m, each correct to 2 significant figures.
Show that the bedroom can be rented.

[3 marks]

6



Not drawn
accurately

In this right-angled triangle,

$$a = 16 \text{ cm}$$

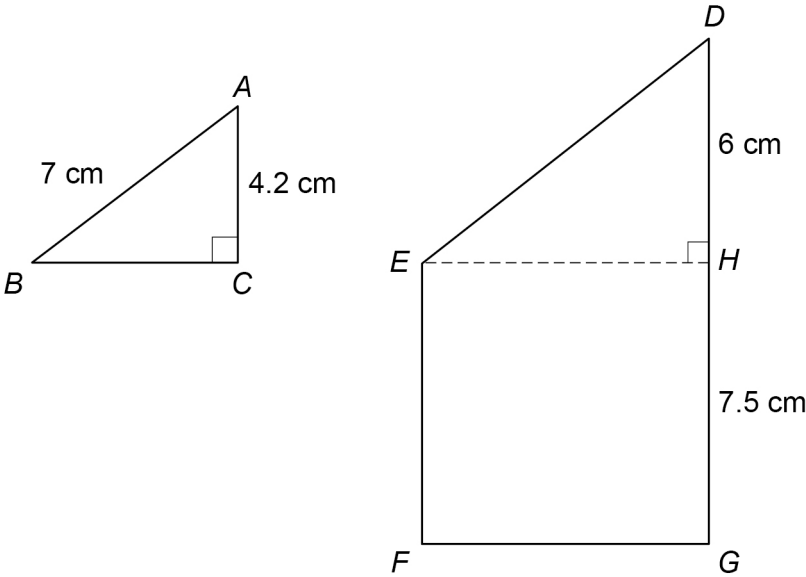
$$a : c = 4 : 5$$

Work out the area of the triangle.

[4 marks]

Answer _____ cm^2

- 7 Trapezium $DEFG$ is formed by joining
triangle DEH
to
rectangle $EFGH$.



ABC is similar to DEH .

Work out the area of $DEFG$.

[5 marks]

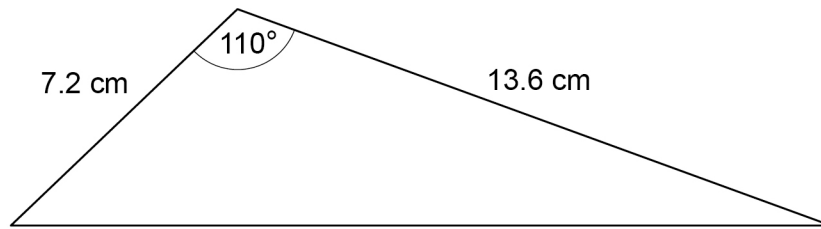
Answer _____ cm^2

8

Two sides of a triangle are measured to 1 decimal place.

The angle between the sides is measured to the nearest degree.

Not drawn
accurately



Work out the upper bound for the area of the triangle.

You **must** show your working.

[4 marks]

Answer _____ cm^2

9

$ABCDE$ is a pentagon with $AB = 7\text{ cm}$

- $BC = 6\text{ cm}$
- AB and BC are perpendicular.
- AB and DC are equal **and** parallel.
- Area of the pentagon $= 54\text{ cm}^2$
- The pentagon has exactly **one** line of symmetry.

Complete a **labelled** drawing of the pentagon.

[4 marks]

