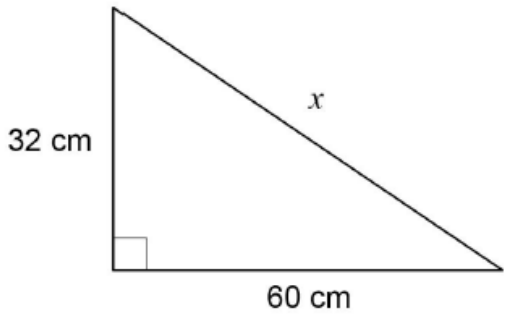
AQA – Mensuration and calculations – GCSE Mathematics Paper-3

1. May/2020/Paper_3F/No.24

Use Pythagoras' theorem to work out the value of x.



Not drawn accurately

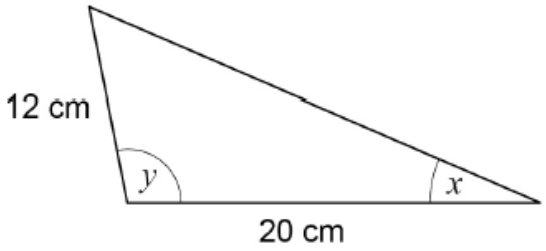
[3 marks]

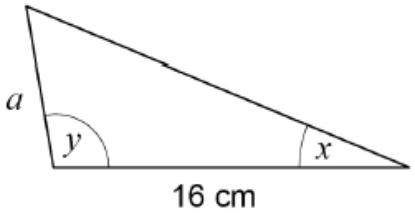
Answer _____ cm

2. May/2020/Paper_3F/No.26

These two triangles are similar.

Not drawn accurately





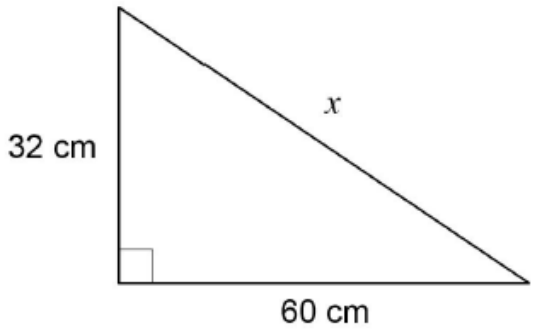
Work out the value of a.

[2 marks]

Answer _____ cm

3. May/2020/Paper_3H/No.7

Use Pythagoras' theorem to work out the value of x.



Not drawn accurately

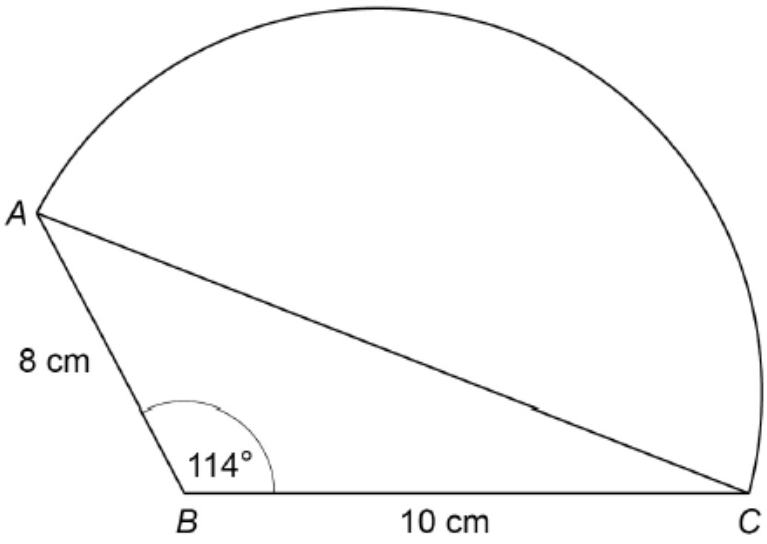
[3 marks]

Answer _____ cm

4. May/2020/Paper_3H/No.29

A shape is made by joining triangle *ABC* to a semicircle with diameter *AC*.

Not drawn accurately



Work out the **total** area of the shape.

[5 marks]

Answer _____ cm^2

5. June/2019/Paper_3F/No.22

Here is a formula.

$$T = n^2 - \frac{12}{n}$$

(a) Work out T when $n = 5$

[1 mark]

Answer _____

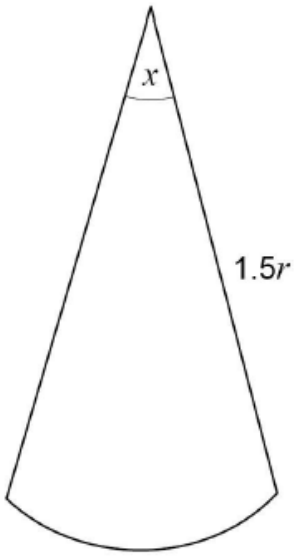
(b) Why is T **always** positive when n is negative?

[2 marks]

6. June/2019/Paper_3H/No.16

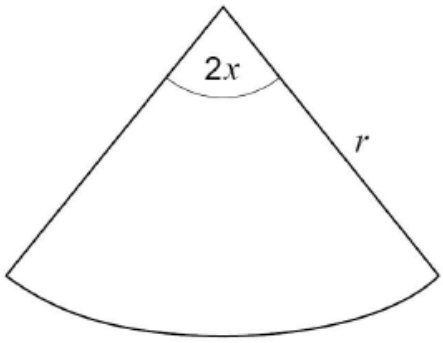
Here are two sectors from different circles.

Sector A



Sector B

Not drawn accurately



Which sector has the bigger area?

Tick a box.

☐ Sector A ☐ Sector B

Show working to support your answer.

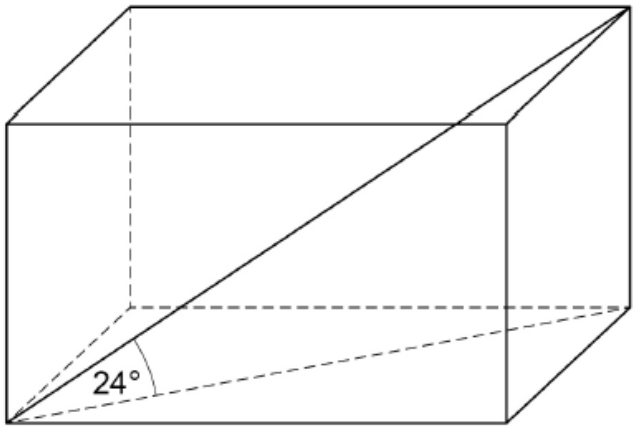
[2 marks]

7. June/2019/Paper_3H/No.24

The length of a diagonal of a cuboid is 20 cm

The diagonal makes an angle of 24° with the base.

The area of the base is 150 cm^2



Work out the volume of the cuboid.

[3 marks]

Answer _____ cm^3

8. June/2019/Paper_3H/No.27

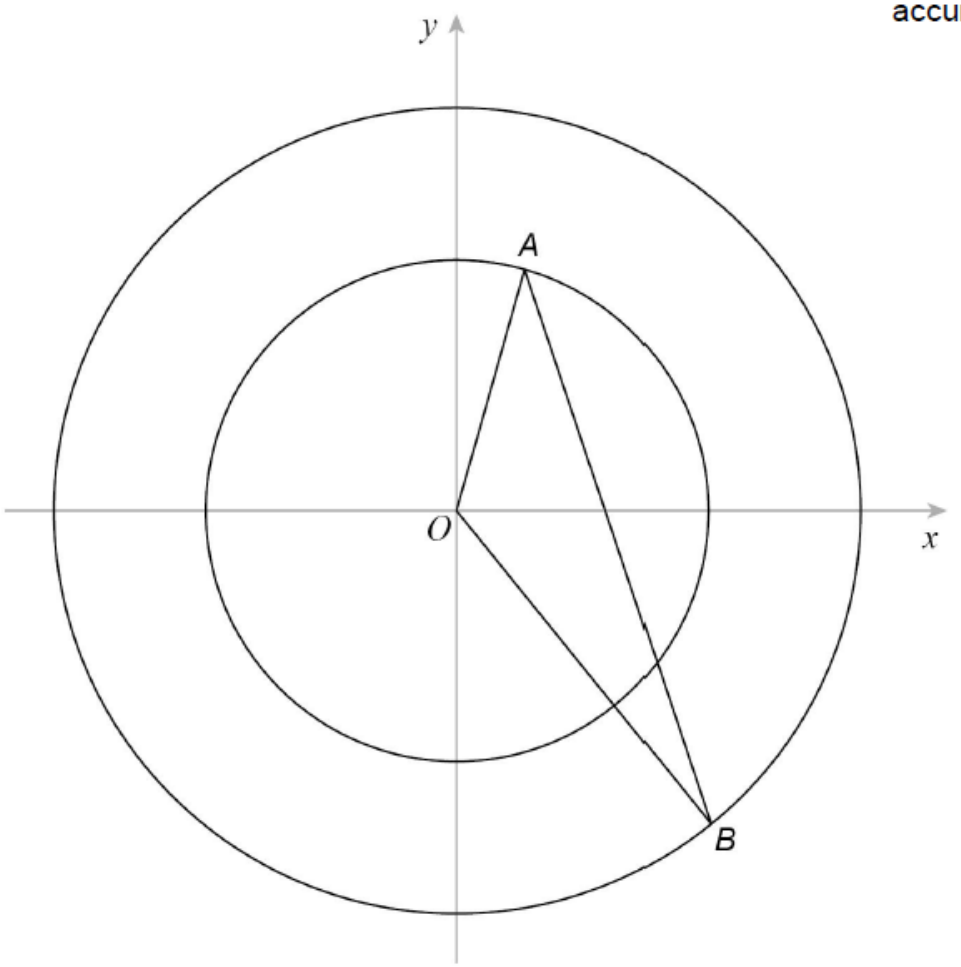
In this question, all lengths are in centimetres.

A is a point on a circle, centre O.

B is a point on a different circle, centre O.

$AB = 20$

Not drawn accurately



The equation of the larger circle is $x^2 + y^2 = 144$

radius of smaller circle : radius of larger circle = 4 : 5

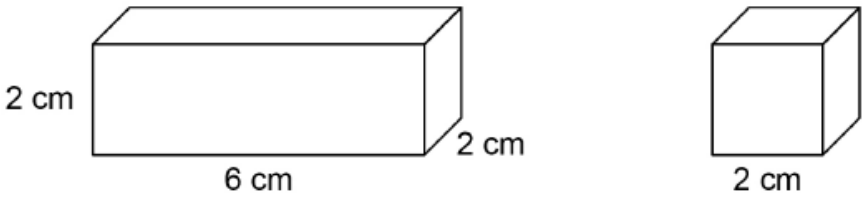
Work out the size of angle AOB.

[5 marks]

Answer _____ degrees

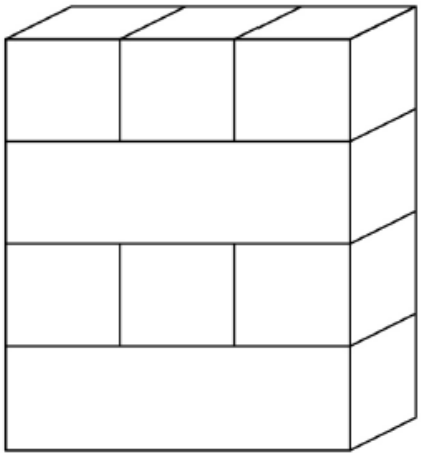
9. Nov/2019/Paper_3F/No.22

Here is a small cuboid and a cube.



Small cuboids and cubes are stacked in layers to make larger cuboids.

Here is a cuboid made with four layers.



The pattern is continued to make a cuboid with volume 336 cm^3

How many **cubes** are used?

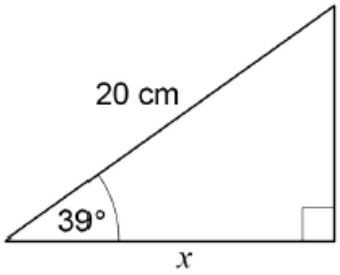
[3 marks]

Answer _____

10. Nov/2019/Paper_3F/No.31

Use trigonometry to work out the value of x.

Not drawn accurately



[2 marks]

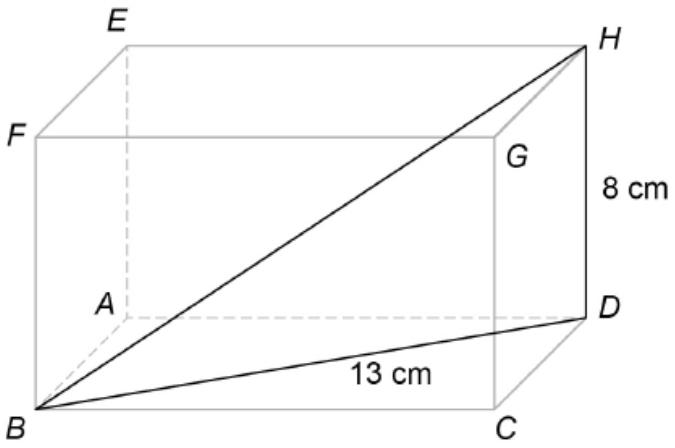
Answer _____ cm

11. Nov/2019/Paper_3H/No.19

Here is a cuboid.

$DH = 8$ cm

$DB = 13$ cm



(a) Work out the size of angle DBH.

[2 marks]

Answer _____ degrees

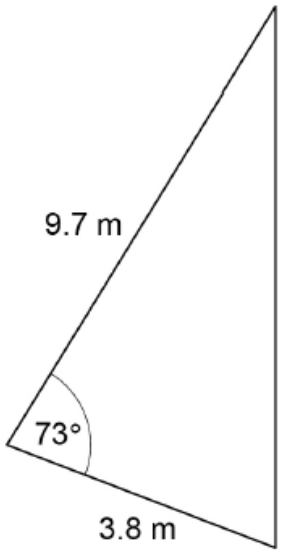
(b) Using your answer to part (a), work out the size of angle ECG.

[1 mark]

Answer _____ degrees

12. Nov/2019/Paper_3H/No.26

Here is a triangular sail.



Not drawn accurately

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

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

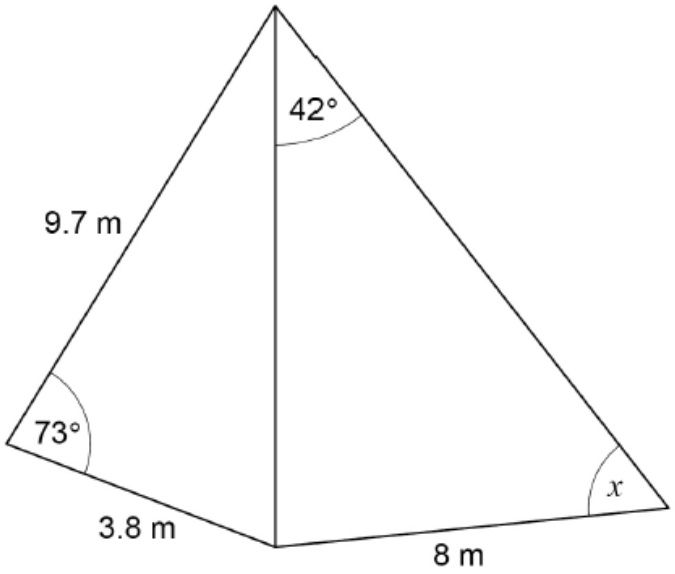
A litre of liquid covers 8.5 square metres of sail.

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

[3 marks]

Answer _____

(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