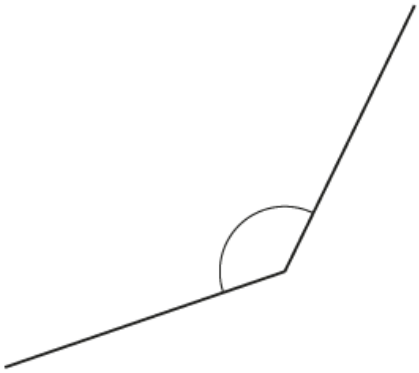
Geometry – 2022 Nov IGCSE 0580 Math

1. Nov/2022/Paper_0580_11/No.2



Write down the mathematical name of this type of angle.

..... [1]

2. Nov/2022/Paper_0580_11/No.3

(a) Measure the length of this line in millimetres.

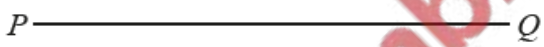
..... mm [1]

(b) Draw a line perpendicular to this line. [1]

3. Nov/2022/Paper_0580_11/No.4

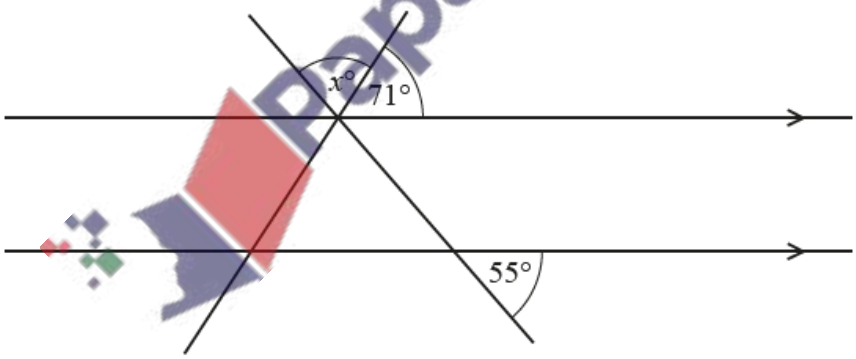
In triangle PQR, $PR = 5$ cm and $QR = 4$ cm.

Using a ruler and compasses only, construct triangle PQR.
Leave in your construction arcs.
The side PQ has been drawn for you.



[2]

4. Nov/2022/Paper_0580_11/No.8



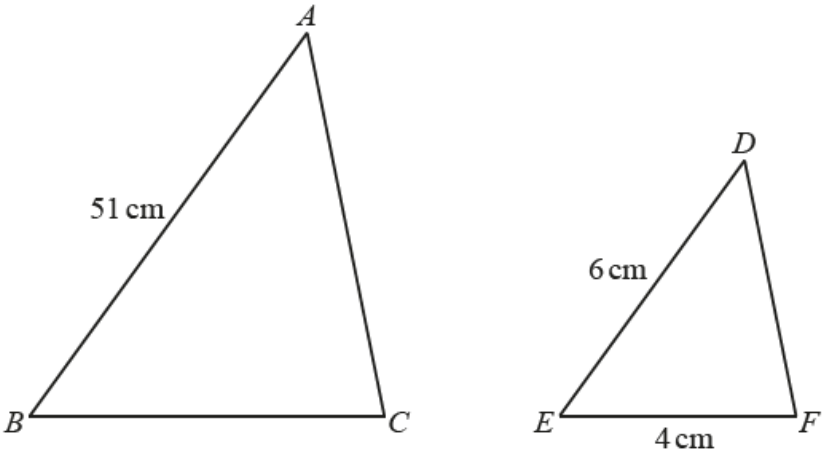
NOT TO SCALE

The diagram shows two straight lines intersecting two parallel lines.

Find the value of x.

$x =$ ..... [2]

5. Nov/2022/Paper_0580_11/No.21



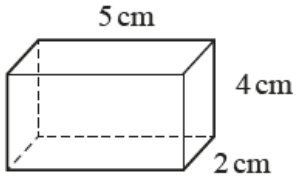
NOT TO SCALE

Triangle ABC is mathematically similar to triangle DEF.

Find BC.

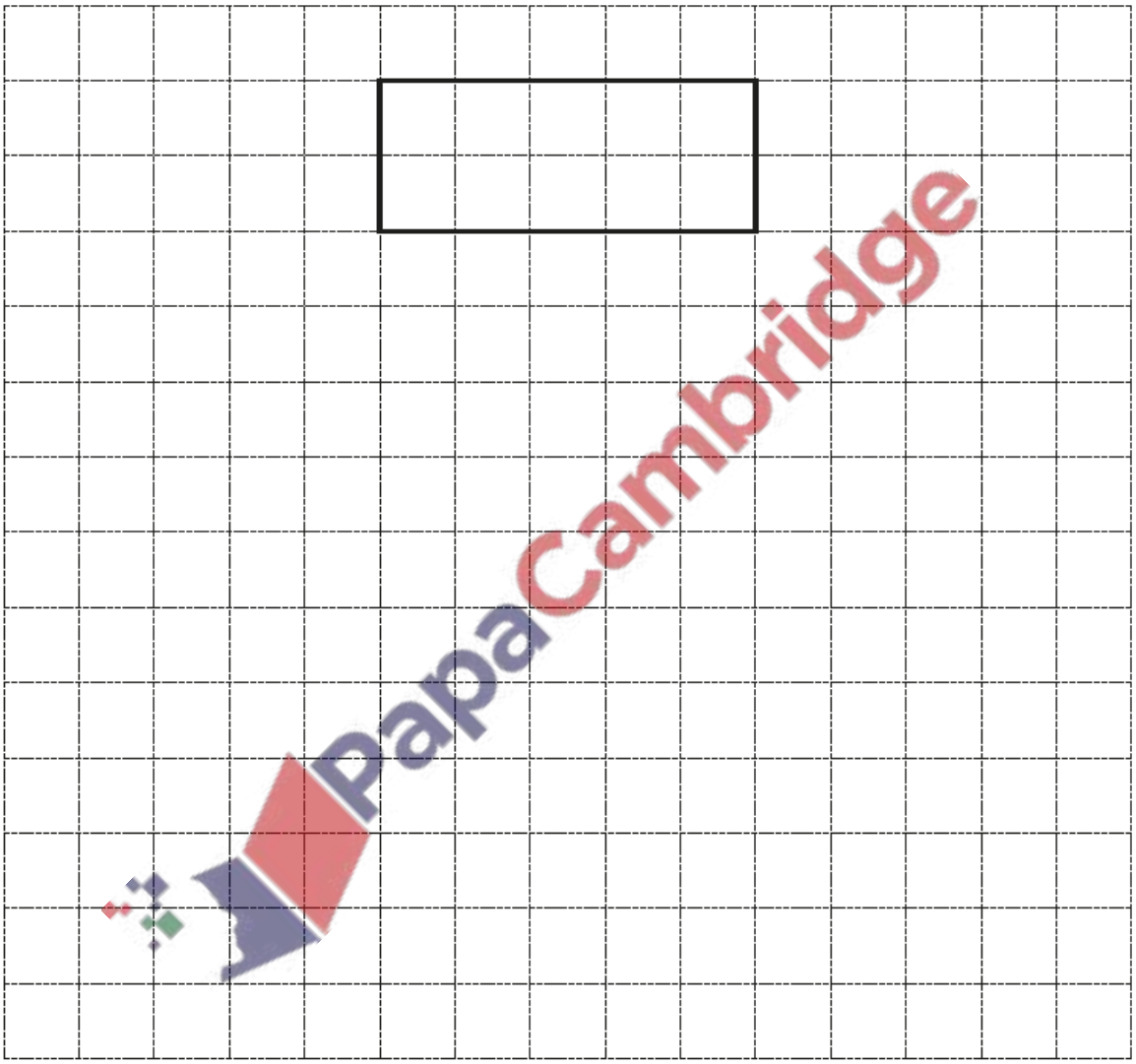
$BC =$ ..... cm [2]

6. Nov/2022/Paper_0580_12/No.4



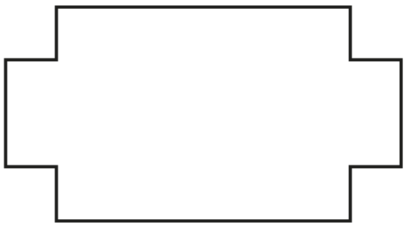
NOT TO SCALE

Complete the net of this cuboid on the 1 cm^2 grid.
One face has been drawn for you.



[3]

7. Nov/2022/Paper_0580_12/No.5



Draw all the lines of symmetry on this shape. [2]

8. Nov/2022/Paper_0580_13/No.4

The diagram shows a shape with four sides of equal length.

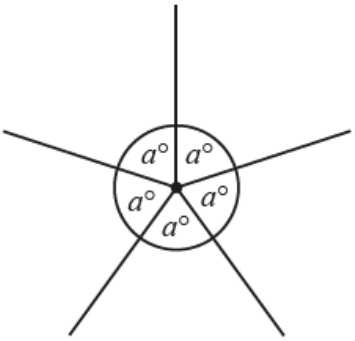
(a) Write down the mathematical name of this shape.

..... [1]

(b) Write down the order of rotational symmetry of this shape.

..... [1]

9. Nov/2022/Paper_0580_13/No.10

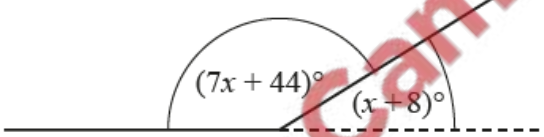


Give the geometrical reason why the value of a is 72.

.....

..... [1]

10. Nov/2022/Paper_0580_13/No.24



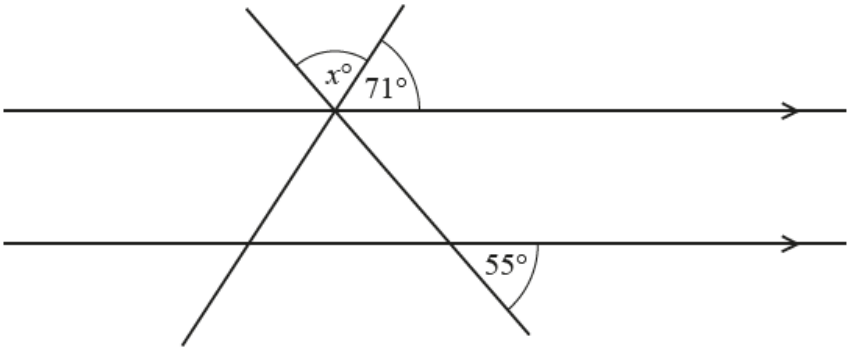
NOT TO SCALE

The diagram shows two sides of a regular polygon.
The interior angle of the polygon is $(7x+44)°$ and the exterior angle is $(x+8)°$.

Find the number of sides of this polygon.

..... [4]

11. Nov/2022/Paper_0580_21/No.5



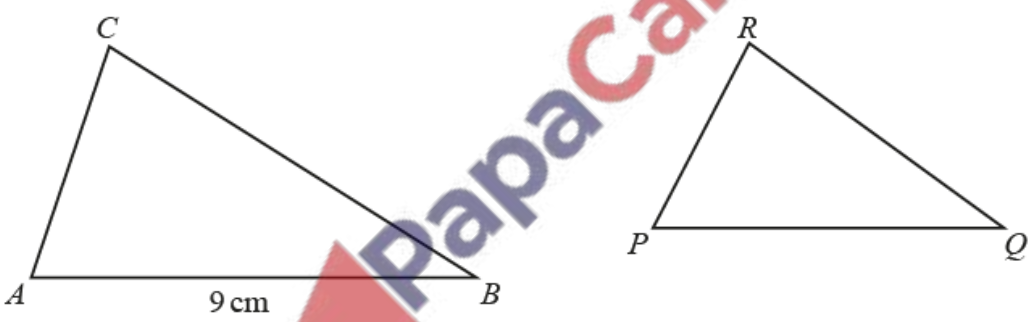
NOT TO SCALE

The diagram shows two straight lines intersecting two parallel lines.

Find the value of x.

$x =$ ..... [2]

12. Nov/2022/Paper_0580_21/No.12



NOT TO SCALE

Triangle PQR is similar to triangle ABC with $\frac{PR}{AC} = \frac{2}{3}$.

$AB = 9$ cm and the area of triangle ABC is 18 cm^2.

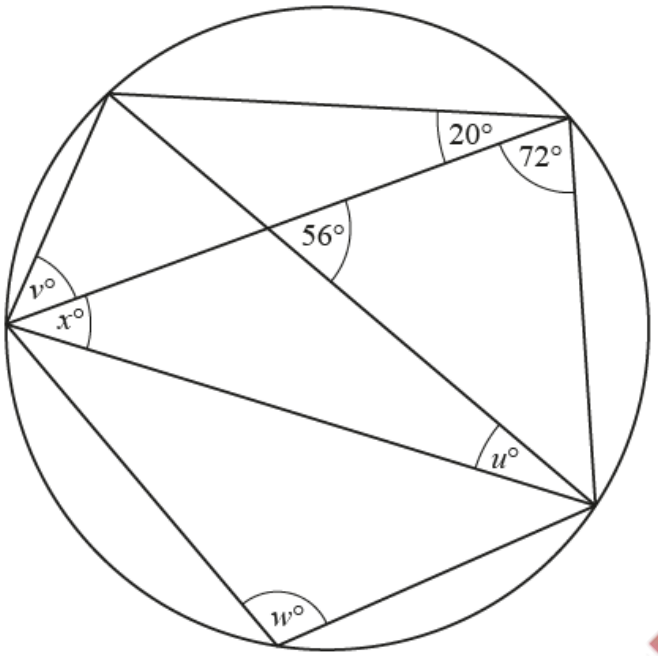
(a) Find the length of PQ.

..... cm [1]

(b) Find the area of triangle PQR.

..... cm^2 [2]

13. Nov/2022/Paper_0580_21/No.16



NOT TO SCALE

The diagram shows a circle and eight chords.

Calculate the values of u, v, w and x.

$u =$ .....

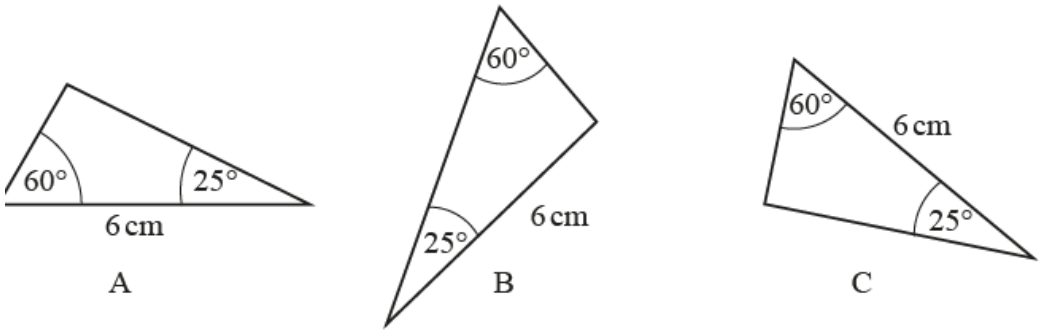
$v =$ .....

$w =$ .....

$x =$ ..... [4]

14. Nov/2022/Paper_0580_22/No.9

The diagram shows three triangles A, B and C.



NOT TO SCALE

(a) Which two of the triangles A, B and C are congruent with each other?

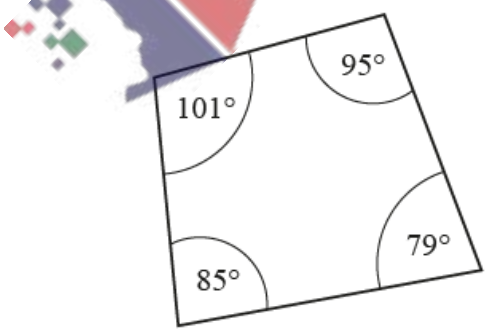
..... [1]

(b) Draw a ring around the congruence criterion that can be used to support your answer to **part (a)**.

SSS ASA SAS RHS

[1]

15. Nov/2022/Paper_0580_22/No.15



NOT TO SCALE

The diagram shows a quadrilateral.

Give a geometrical reason why this is a cyclic quadrilateral.

..... [1]

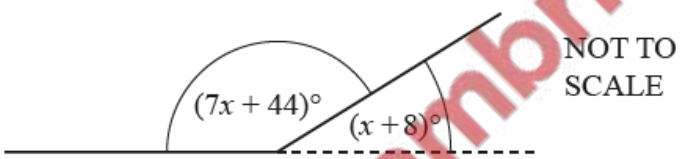
16. Nov/2022/Paper_0580_22/No.22

The volumes of two mathematically similar objects are $56\,cm^3$ and $875\,cm^3$.
The height of the smaller object is 18 cm.

Find the height of the larger object.

..... cm [3]

17. Nov/2022/Paper_0580_23/No.11



The diagram shows two sides of a regular polygon.
The interior angle of the polygon is $(7x+44)°$ and the exterior angle is $(x+8)°$.

Find the number of sides of this polygon.

..... [4]

18. Nov/2022/Paper_0580_23/No.14

A map has a scale of 1 : 200 000.

Find the area, in square kilometres, of a lake that has an area of 12.4 cm^2 on the map.

..... km^2 [2]

19. Nov/2022/Paper_0580_23/No.18

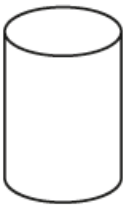
Two bottles are mathematically similar.
The small bottle has a capacity of 324 ml and a height of 12 cm.
The large bottle has a capacity of 768 ml.

Calculate the height of the large bottle.

..... cm [3]

20. Nov/2022/Paper_0580_31/No.6

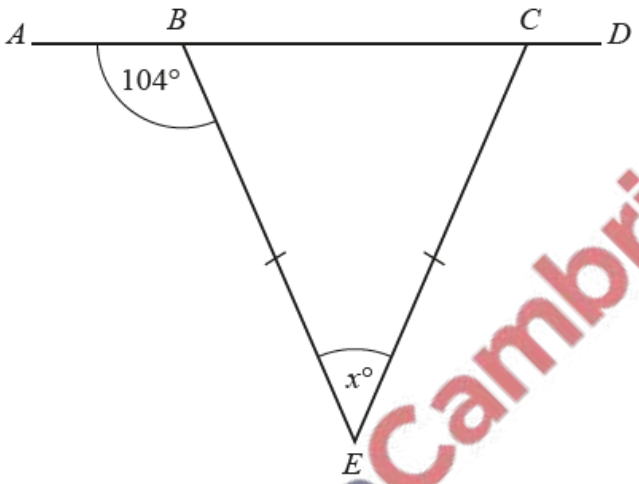
(a)



Write down the mathematical name of this solid.

..... [1]

(b)



NOT TO SCALE

The diagram shows triangle BCE and a straight line $ABCD$.
$BE = CE$ and angle $ABE = 104°$.

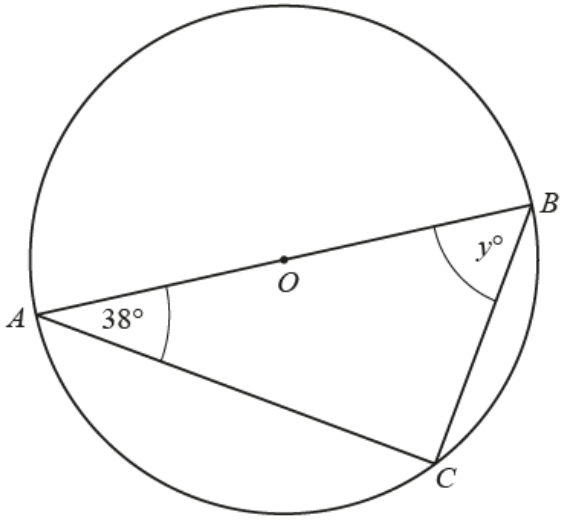
Find the value of x.

$x =$ ..... [2]

(c) Work out the size of one interior angle of a regular polygon with 15 sides.

..... [2]

(d)



NOT TO SCALE

A, B and C are points on a circle, centre O.

(i) Write down the mathematical name of the line BC.

..... [1]

(ii) Draw a tangent to the circle at point B. [1]

(iii) The area of the circle is $245.5\,\text{cm}^2$.

Calculate AB.

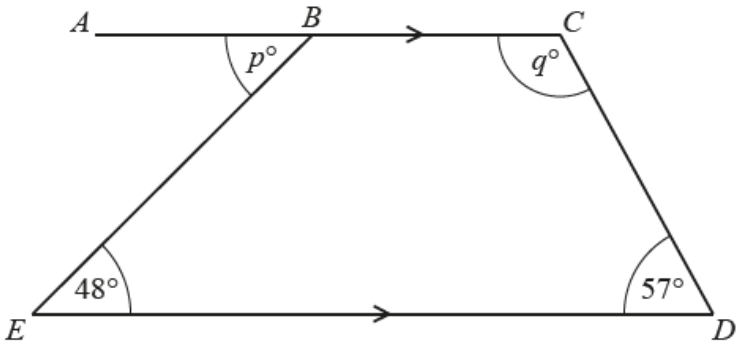
$AB =$ ..... cm [3]

(iv) Find the value of y.

$y =$ ..... [2]

21. Nov/2022/Paper_0580_33/No.6

(a)



NOT TO SCALE

In the diagram, ABC is parallel to ED.

(i) Find the value of p.
Give a geometrical reason for your answer.

$p =$ ..... because .....

..... [2]

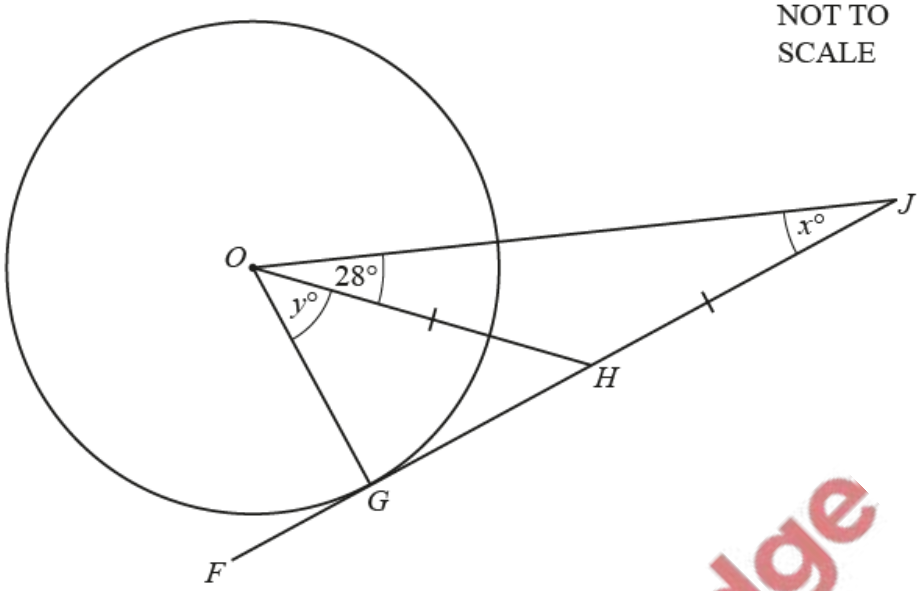
(ii) Find the value of q.
Give a geometrical reason for your answer.

$q =$ ..... because .....

..... [2]

(b)

NOT TO SCALE



G is a point on the circle, centre O.
FHJ is a tangent to the circle at G and $OH = HJ$.

(i) Write down the mathematical name for triangle OHJ.

..... [1]

(ii) Find the value of x.

$x =$ ..... [1]

(iii) Find the value of y.

$y =$ ..... [3]