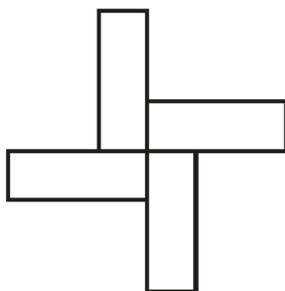
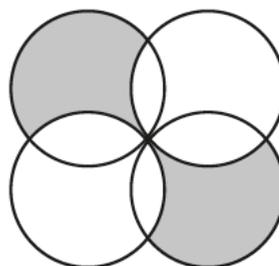


1. **Nov/2020/Paper_13/No.4**

Write down the order of rotational symmetry of each shape.

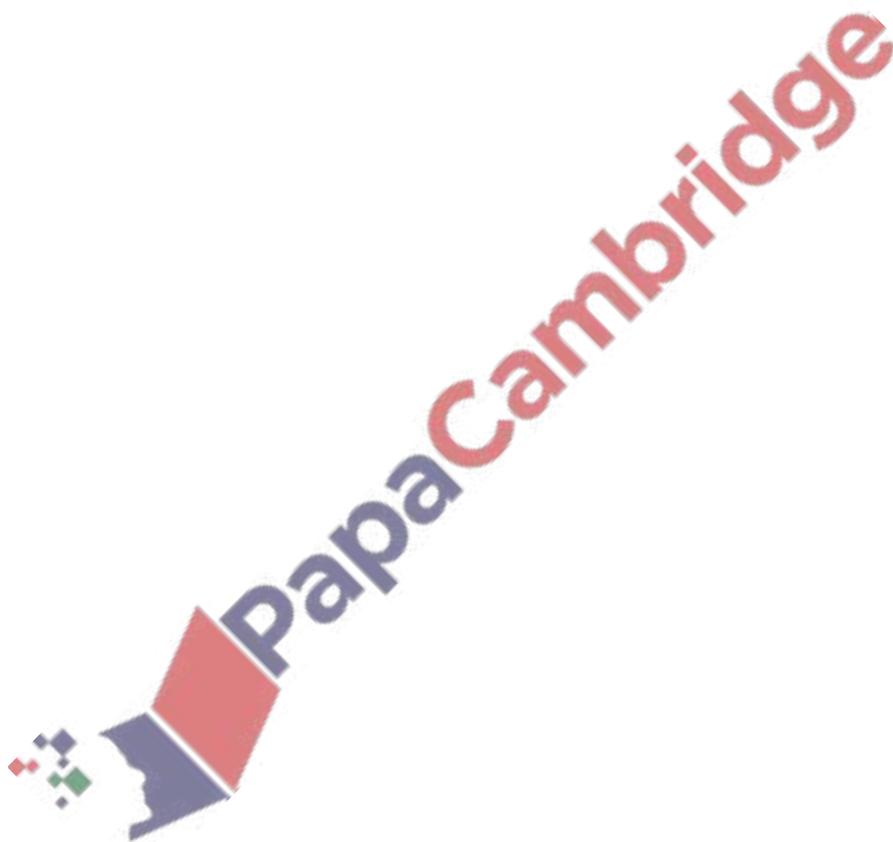


.....



.....

[2]



2. Nov/2020/Paper_13/No.6

In triangle ABC , $BC = 7.6$ cm and $AC = 6.2$ cm.

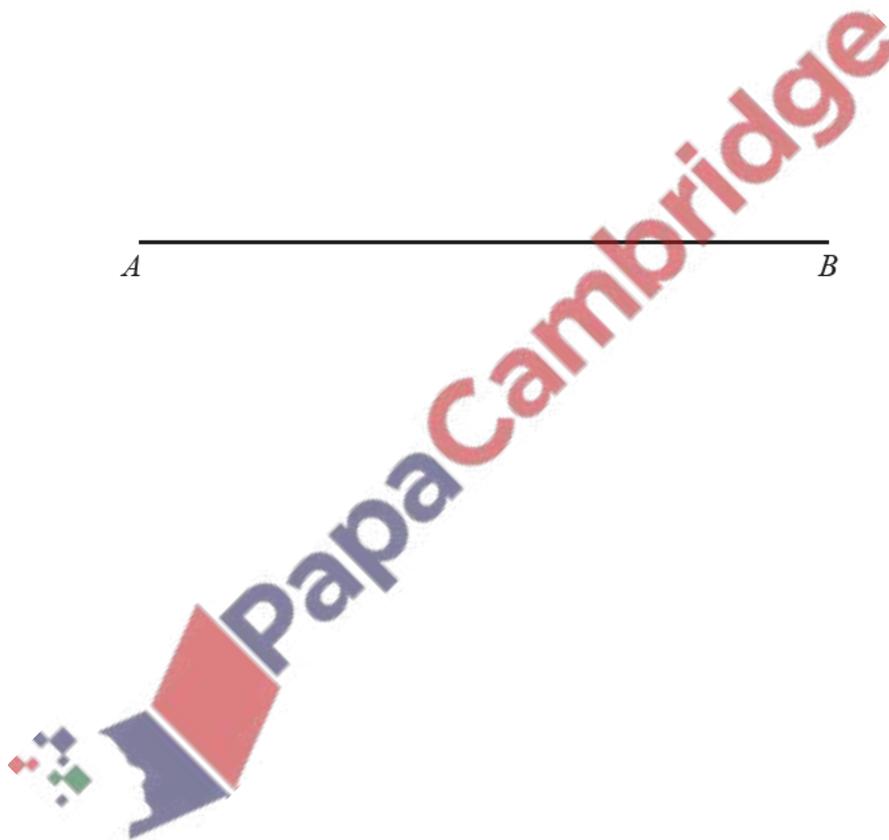
Using a compass and ruler only, construct triangle ABC .

Leave in your construction arcs.

The side AB has been drawn for you.



[2]

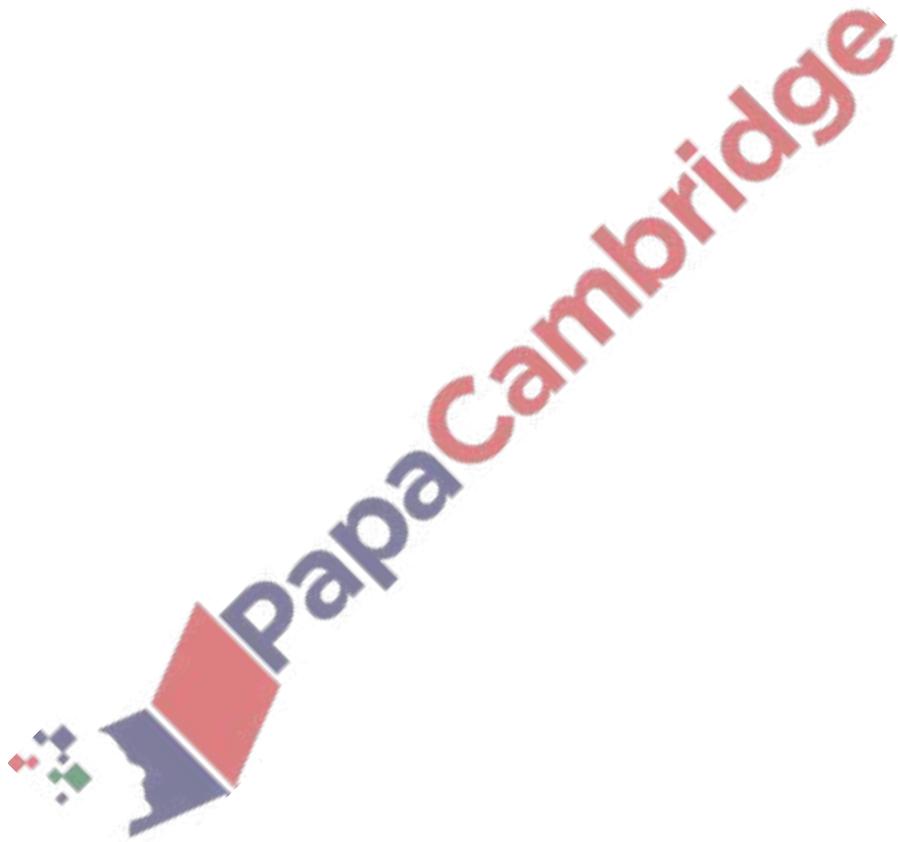


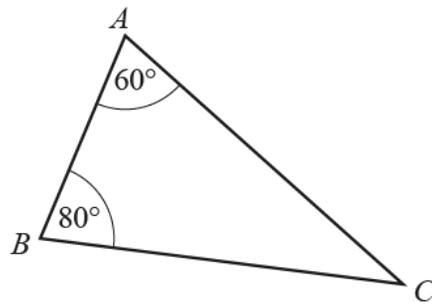
3. Nov/2020/Paper_13/No.20

A regular polygon has an exterior angle of 20° .

Work out the number of sides of this polygon.

..... [1]





NOT TO SCALE

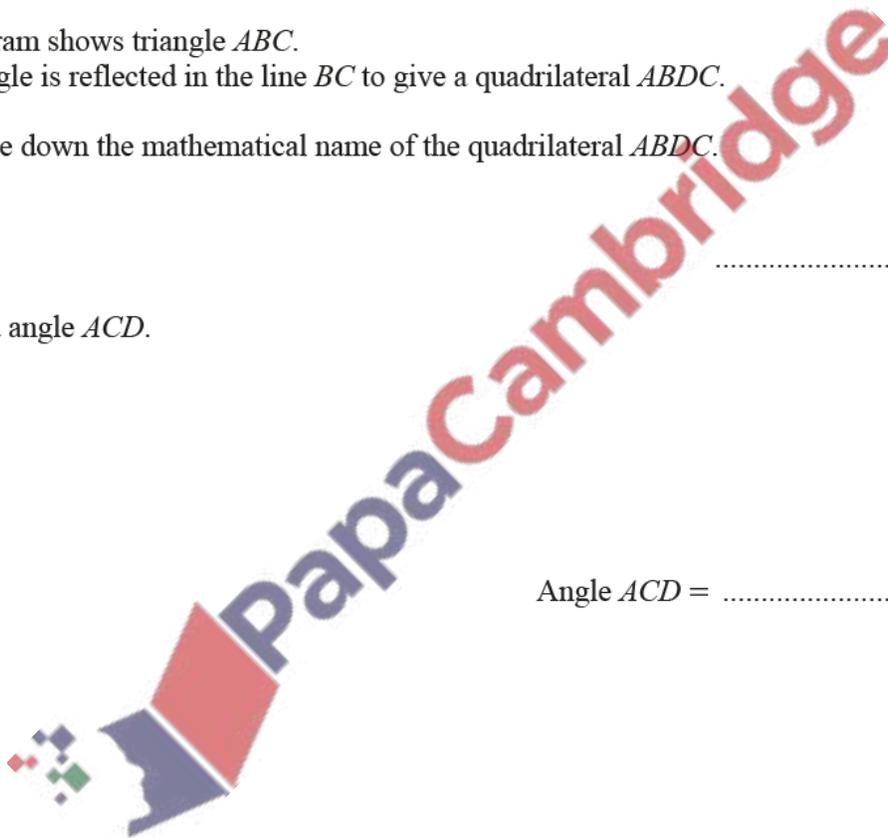
The diagram shows triangle ABC .
The triangle is reflected in the line BC to give a quadrilateral $ABDC$.

(a) Write down the mathematical name of the quadrilateral $ABDC$.

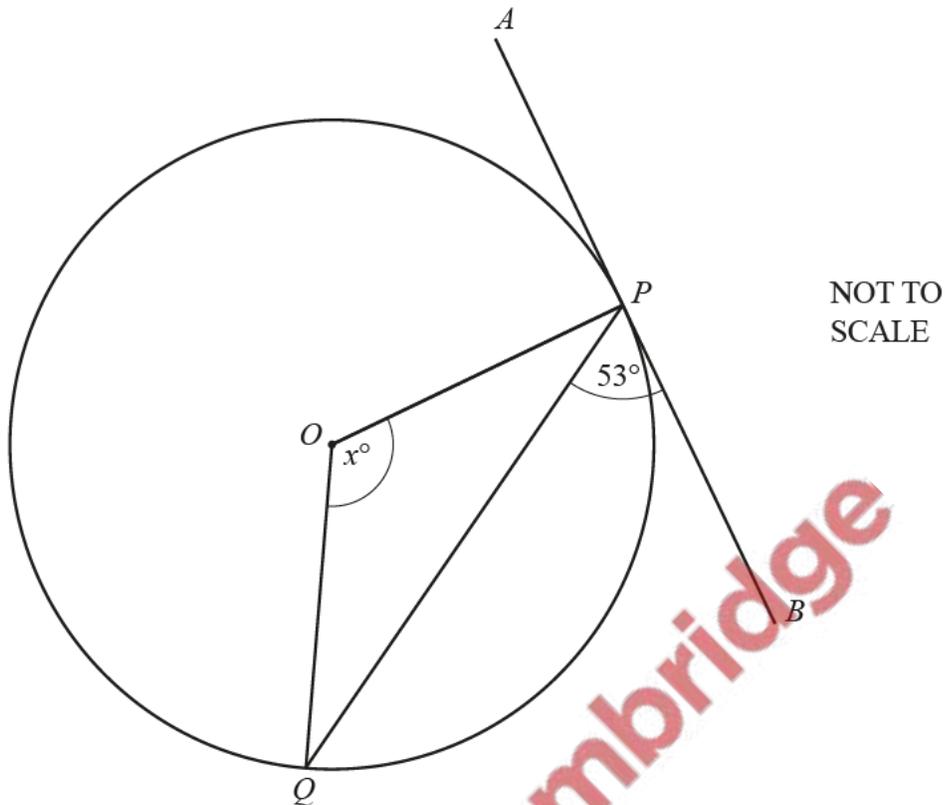
..... [1]

(b) Find angle ACD .

Angle $ACD =$ [2]



(a)



P and Q are points on the circle, center O .
 APB is a tangent to the circle at P .

(i) Write down the mathematical name for the line PQ .

..... [1]

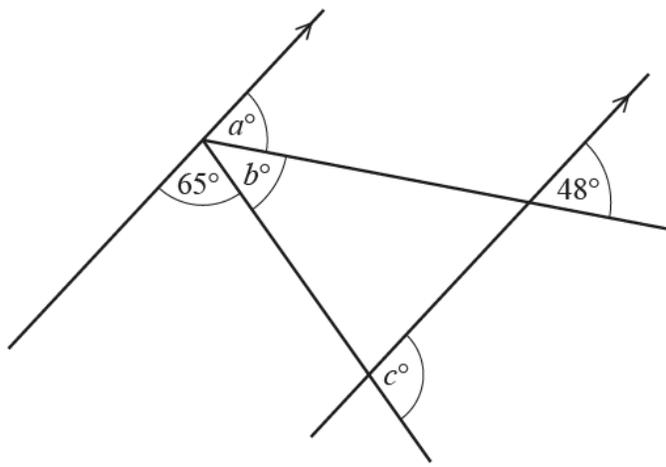
(ii) Explain why angle OPB is 90° .

..... [1]

(iii) Find the value of x .

$x =$ [3]

(b)



NOT TO SCALE

The diagram shows two parallel lines and two straight lines.

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

$a = \dots\dots\dots$ because $\dots\dots\dots$ [2]

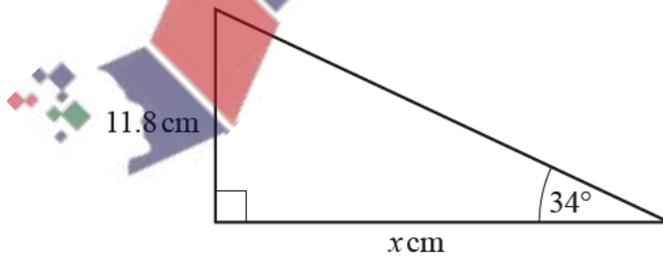
- (ii) Find the value of b .
Give a reason for your answer.

$b = \dots\dots\dots$ because $\dots\dots\dots$ [2]

- (iii) Find the value of c .

$c = \dots\dots\dots$ [2]

(c)

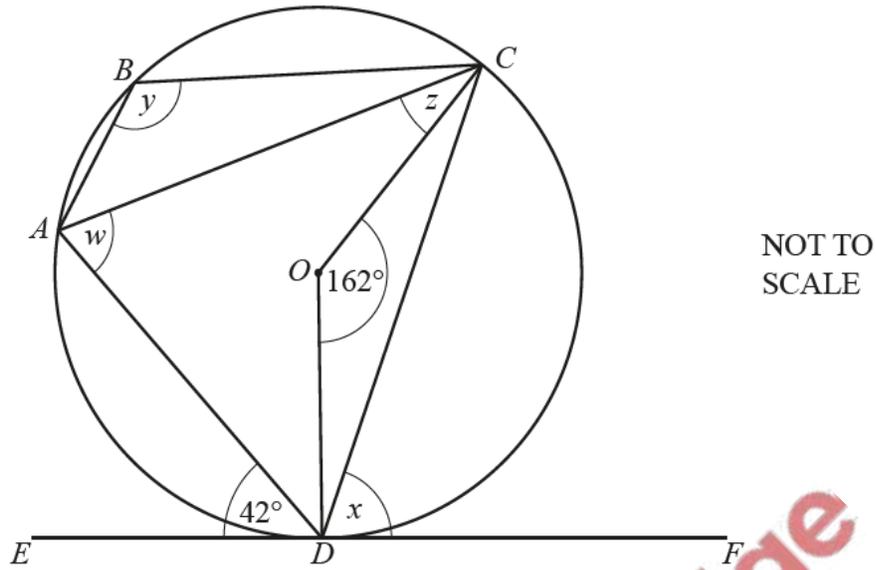


NOT TO SCALE

Calculate the value of x .

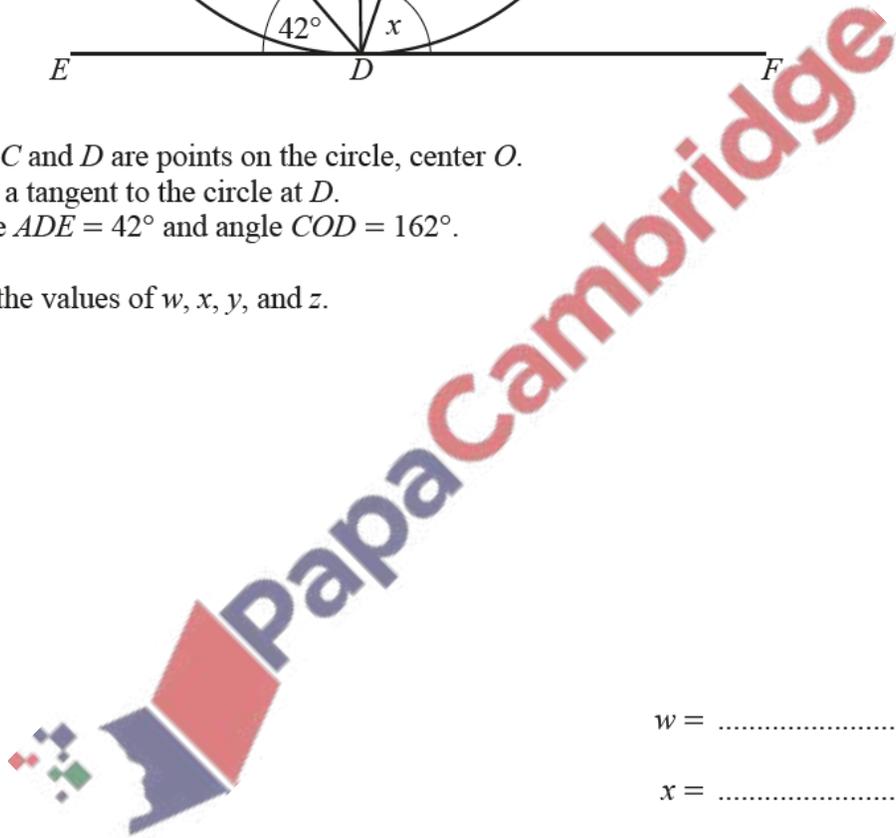
$x = \dots\dots\dots$ [3]

(a)



A, B, C and D are points on the circle, center O .
 EF is a tangent to the circle at D .
 Angle $ADE = 42^\circ$ and angle $COD = 162^\circ$.

Find the values of $w, x, y,$ and z .



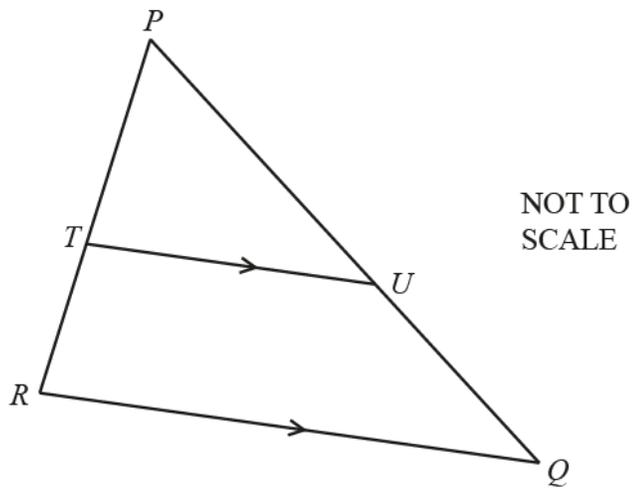
$w = \dots\dots\dots$

$x = \dots\dots\dots$

$y = \dots\dots\dots$

$z = \dots\dots\dots$ [7]

(b)



PQR is a triangle.
 T is a point on PR and U is a point on PQ .
 RQ is parallel to TU .

- (i) Explain why triangle PQR is similar to triangle PUT .
Give a reason for each statement you make.

.....
.....
.....
..... [3]

- (ii) $PT : TR = 4 : 3$

- (a) Find the ratio $PU : PQ$.

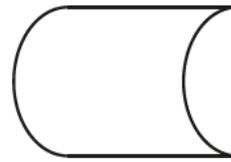
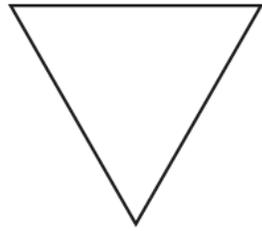
..... : [1]

- (b) The area of triangle PUT is 20 cm^2 .

Find the area of the quadrilateral $QRTU$.

..... cm^2 [3]

(a)



On each shape draw all the lines of symmetry.

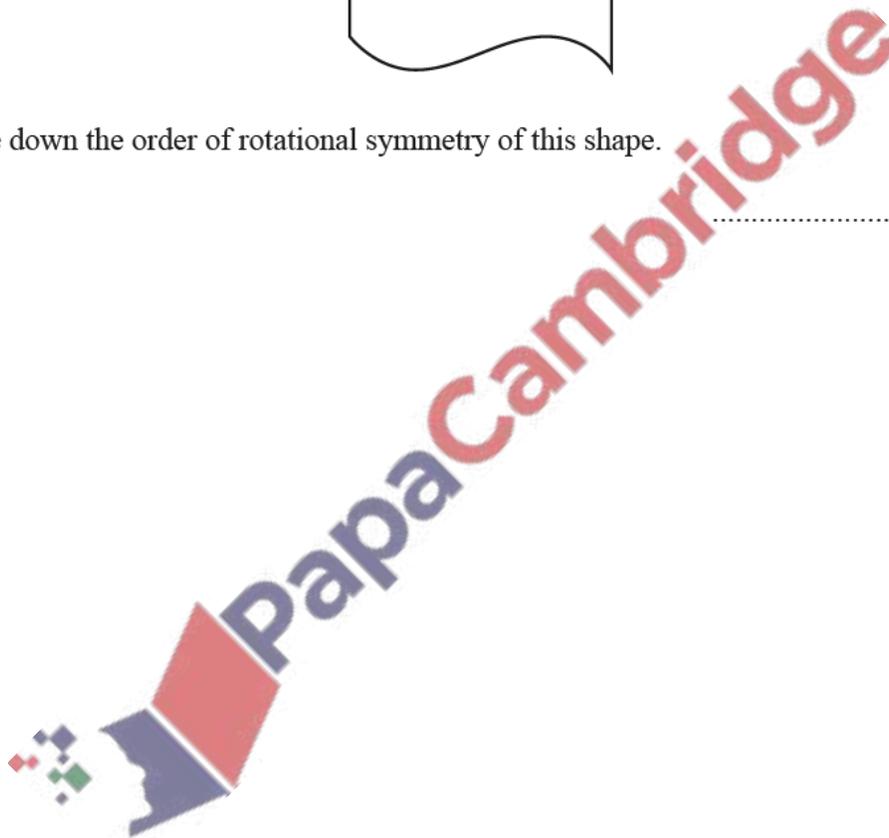
[3]

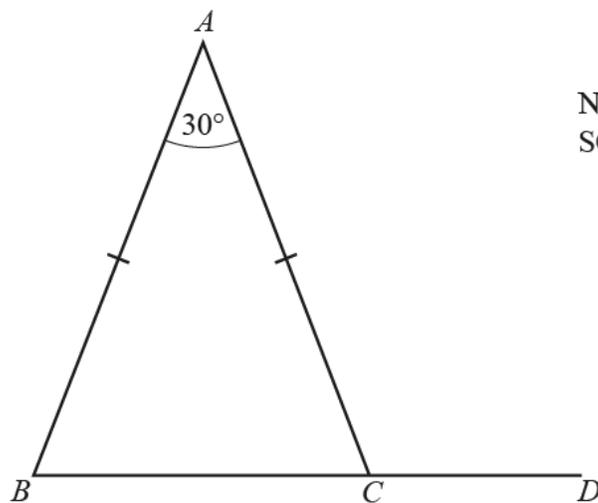
(b)



Write down the order of rotational symmetry of this shape.

..... [1]

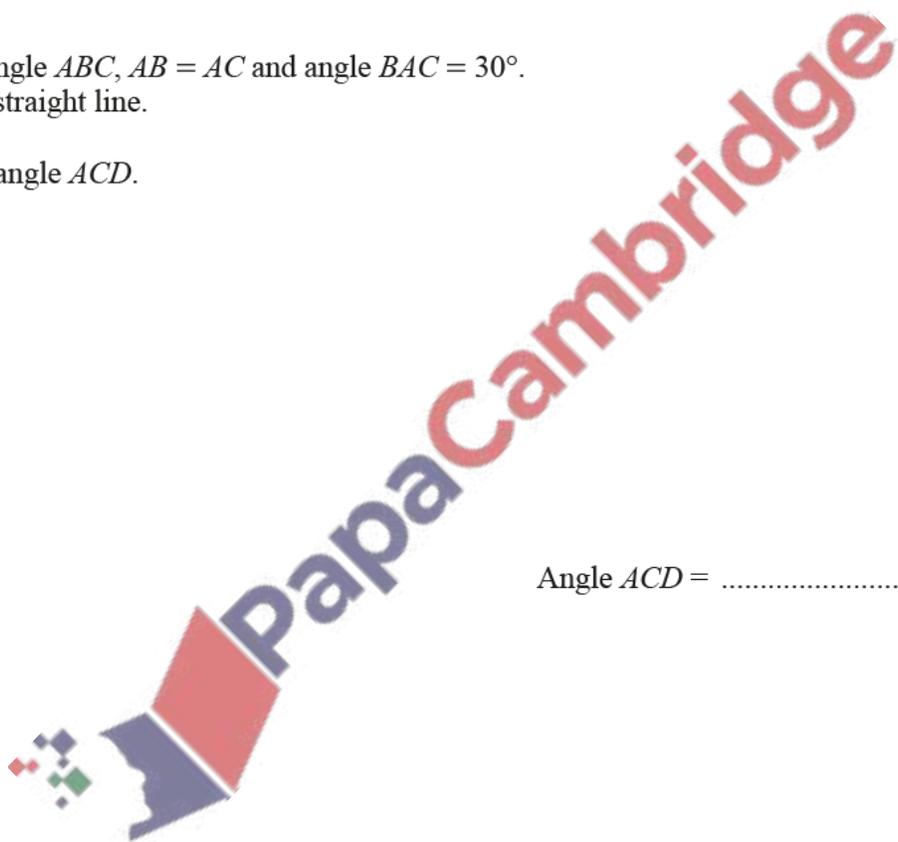




NOT TO
SCALE

In the triangle ABC , $AB = AC$ and angle $BAC = 30^\circ$.
 BCD is a straight line.

Work out angle ACD .

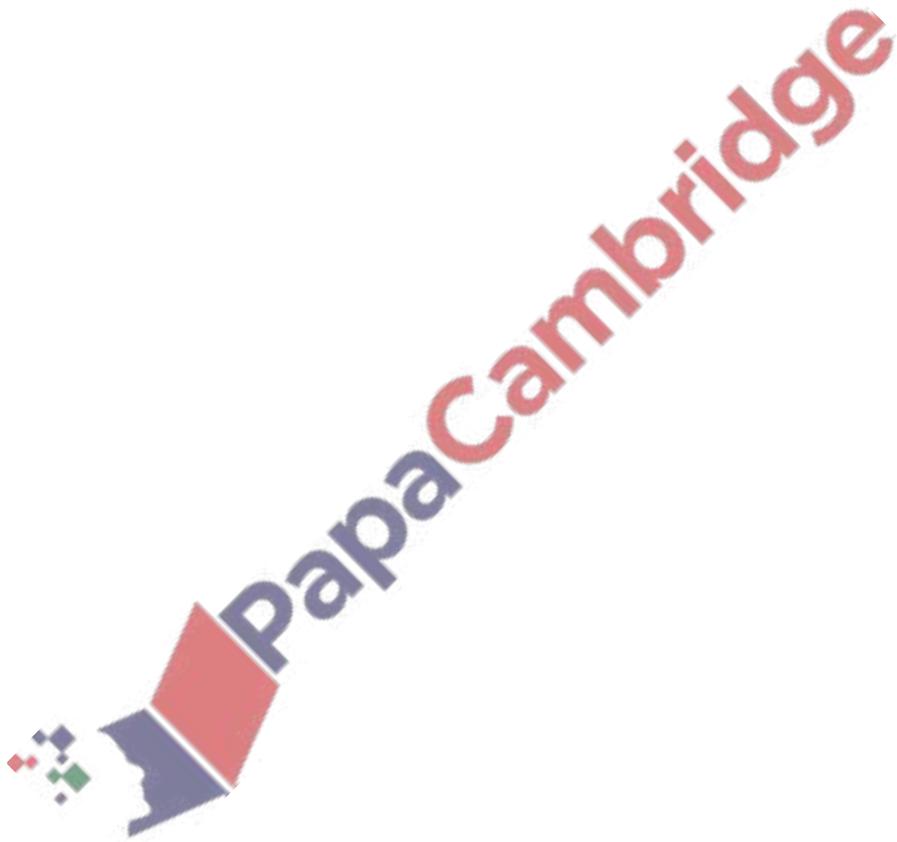


Angle $ACD = \dots\dots\dots$ [3]

9. June/2020/Paper_11/No.12

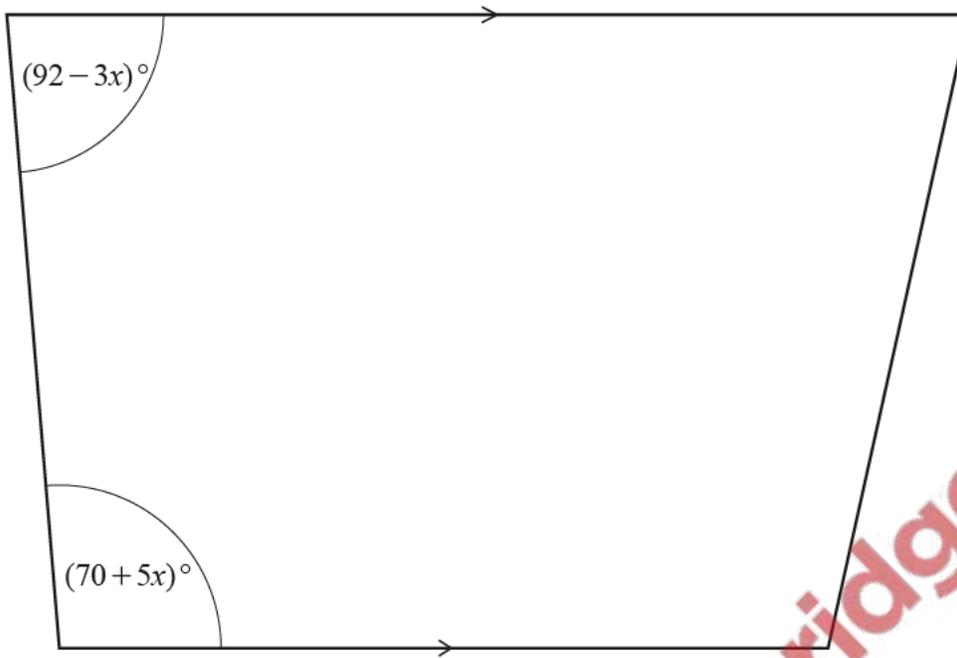
Work out the size of one interior angle of a regular 9-sided polygon.

..... [2]



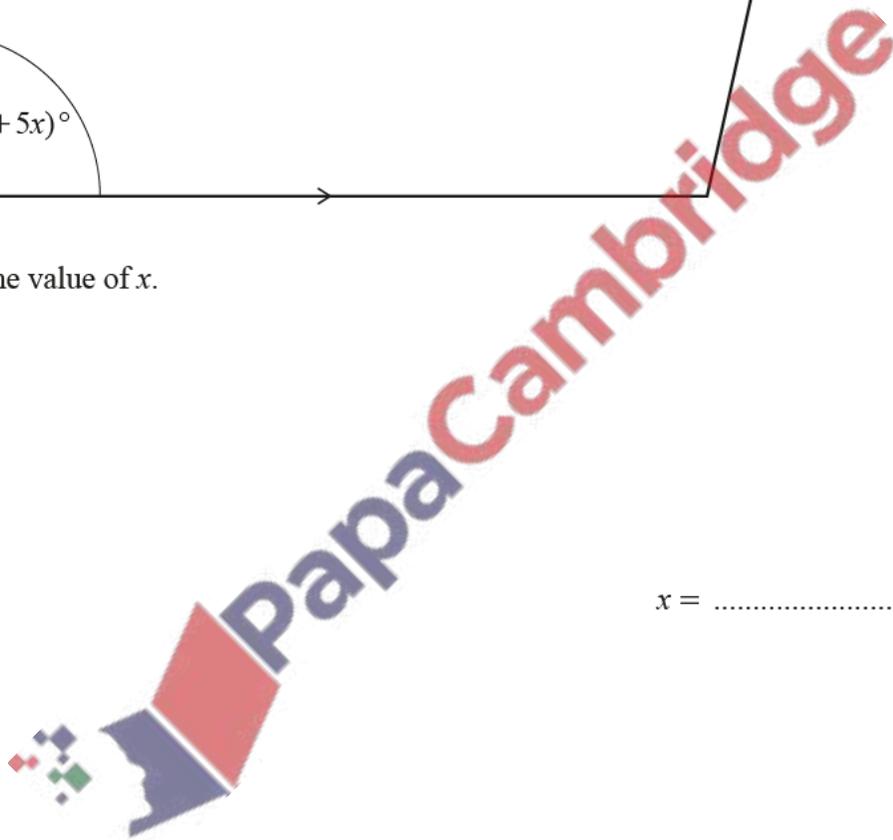
10. June/2020/Paper_11/No.16

The diagram shows a trapezoid.

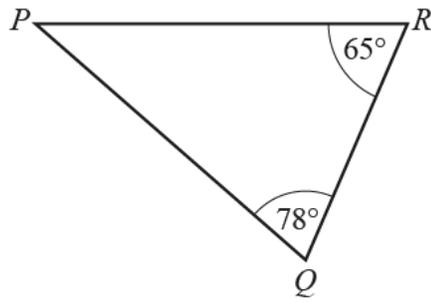
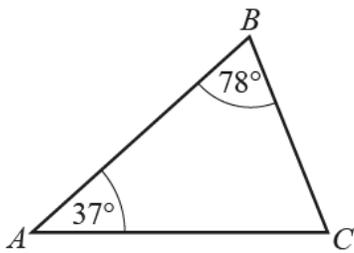


NOT TO
SCALE

Work out the value of x .



$x = \dots\dots\dots$ [3]



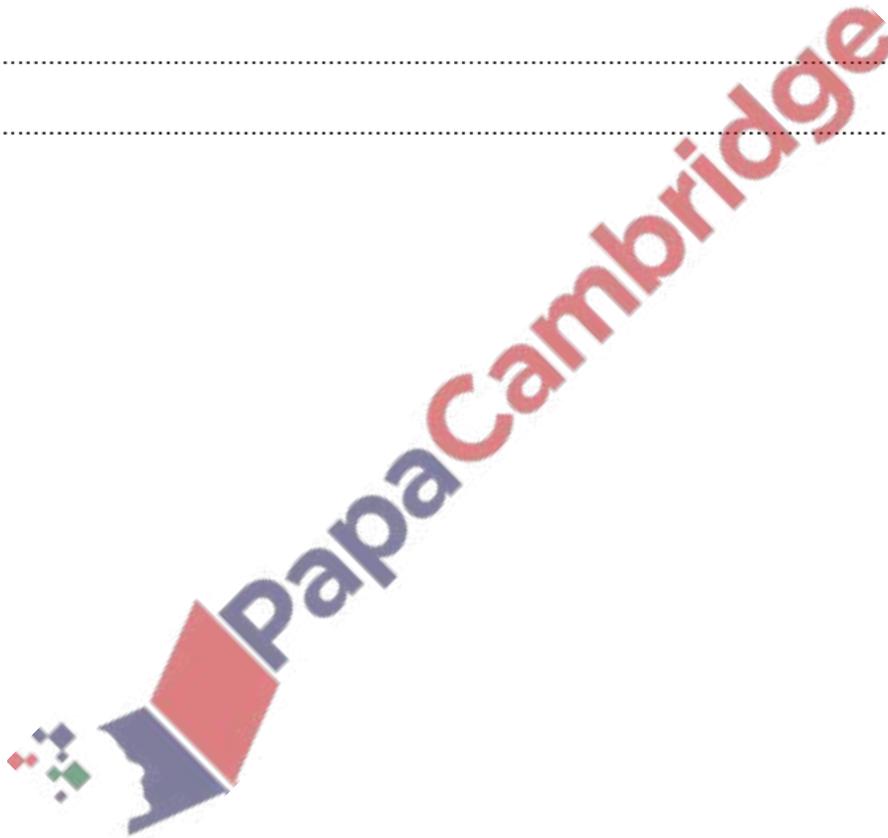
NOT TO
SCALE

Explain why triangle ABC is similar to triangle PQR .

.....

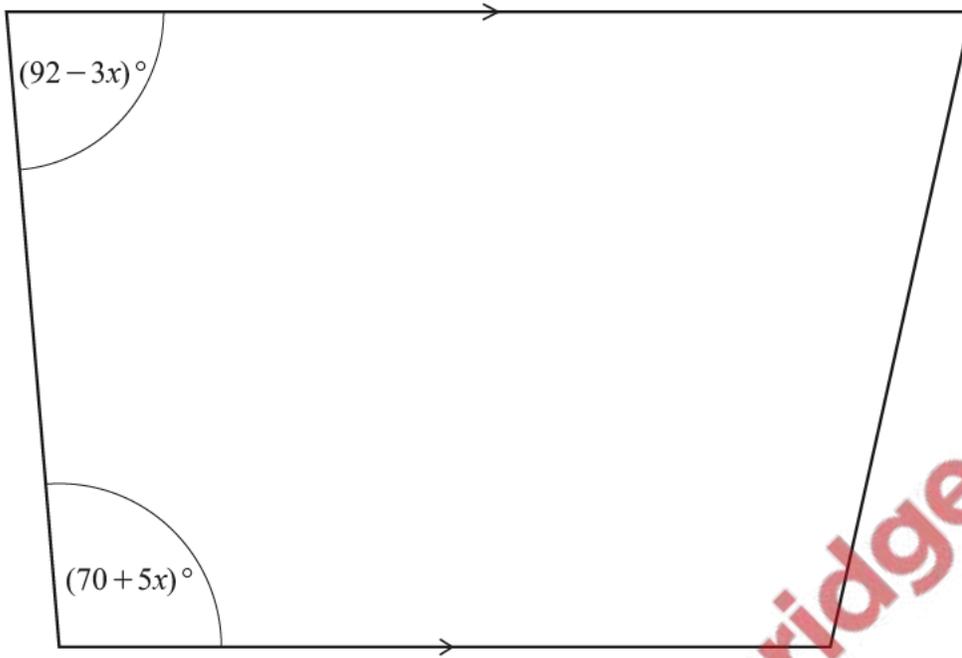
.....

[2]



12. June/2020/Paper_21/No.6

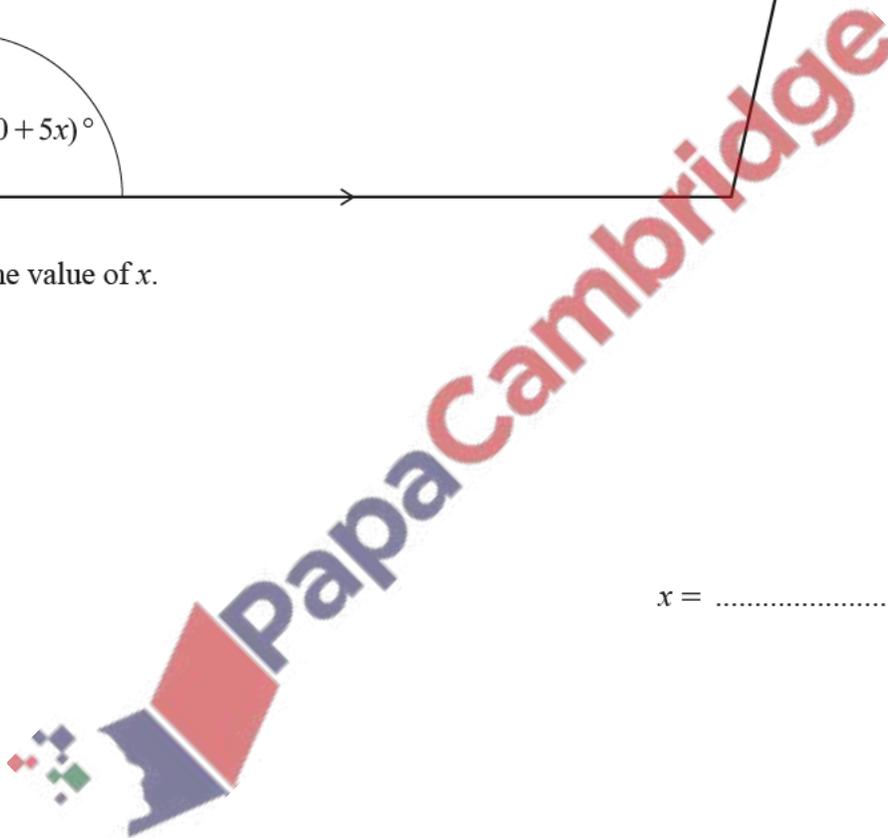
The diagram shows a trapezoid.

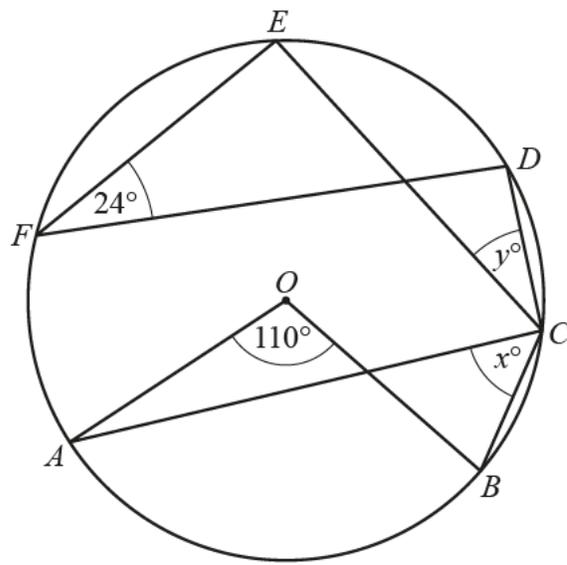


NOT TO
SCALE

Work out the value of x .

$x = \dots\dots\dots$ [3]





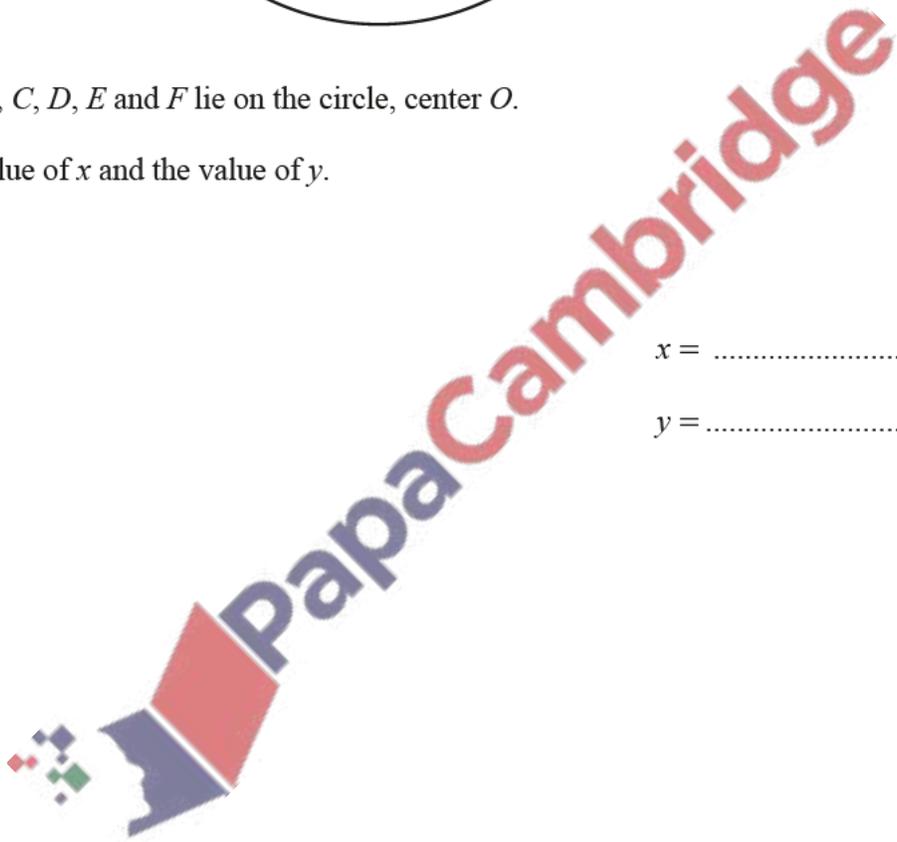
NOT TO SCALE

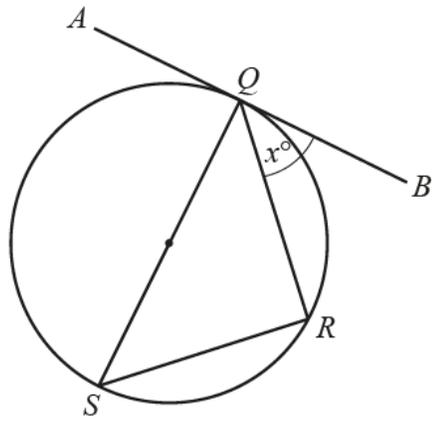
Points A, B, C, D, E and F lie on the circle, center O .

Find the value of x and the value of y .

$x = \dots\dots\dots$

$y = \dots\dots\dots$ [2]





NOT TO
SCALE

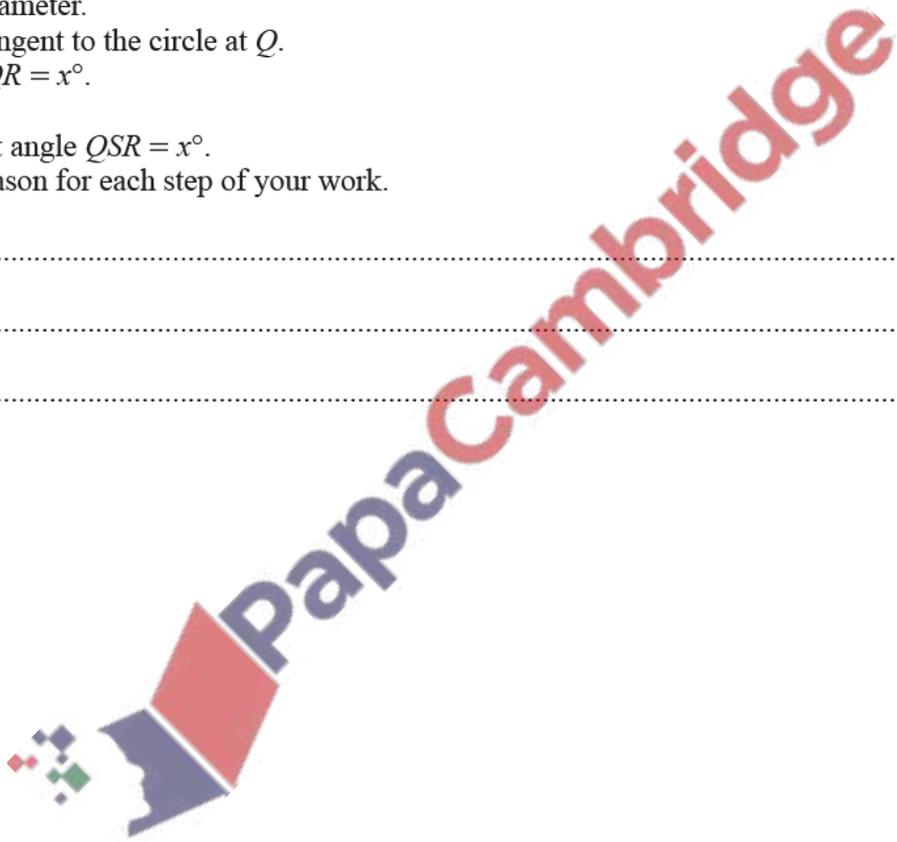
Q , R and S are points on the circle.
 QS is a diameter.
 AB is a tangent to the circle at Q .
 Angle $BQR = x^\circ$.

Show that angle $QSR = x^\circ$.
 Give a reason for each step of your work.

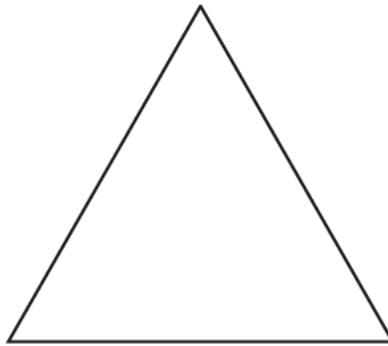
.....

.....

..... [3]



The diagram shows a triangle with each side of length 5 cm.



(a) Write down the mathematical name for this type of triangle.

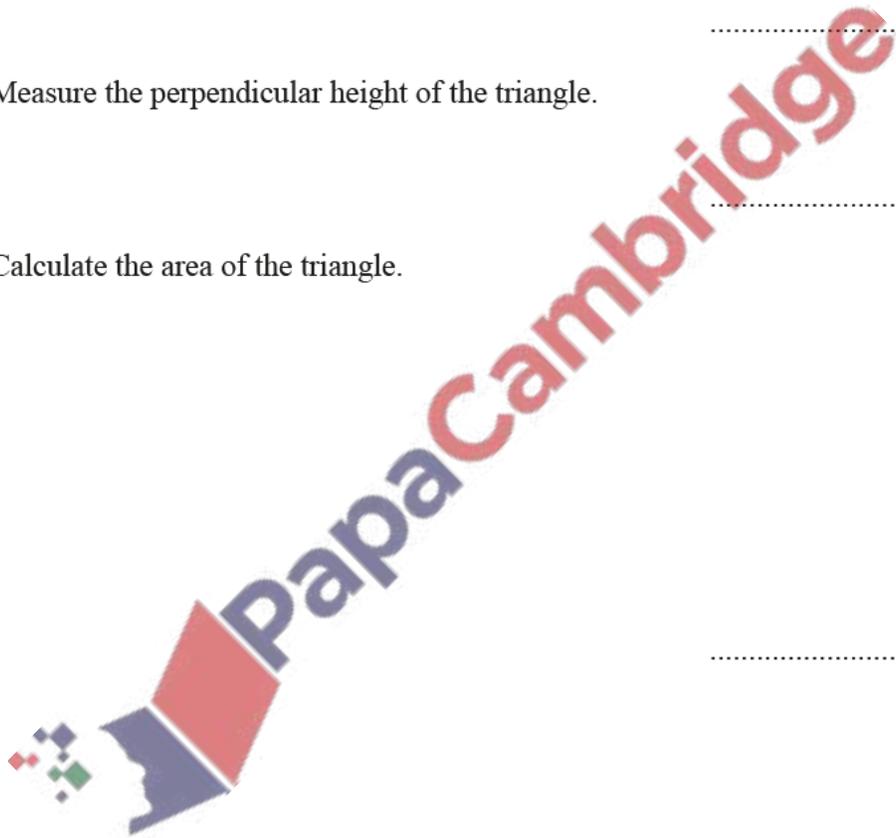
..... [1]

(b) (i) Measure the perpendicular height of the triangle.

..... cm [1]

(ii) Calculate the area of the triangle.

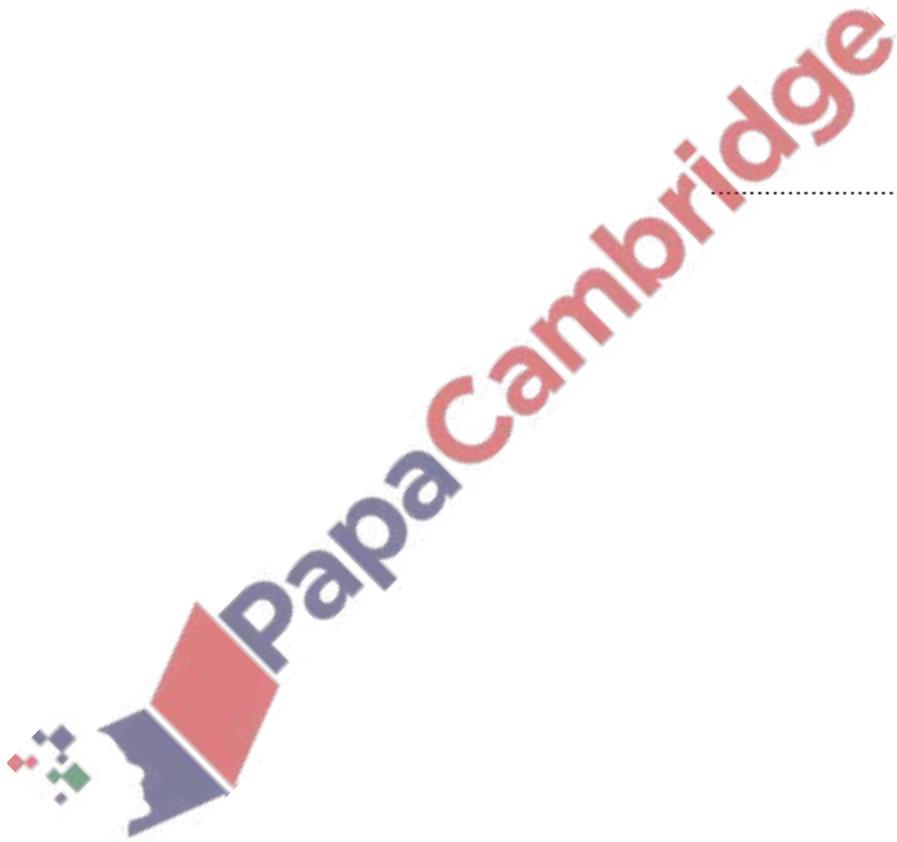
..... cm^2 [2]

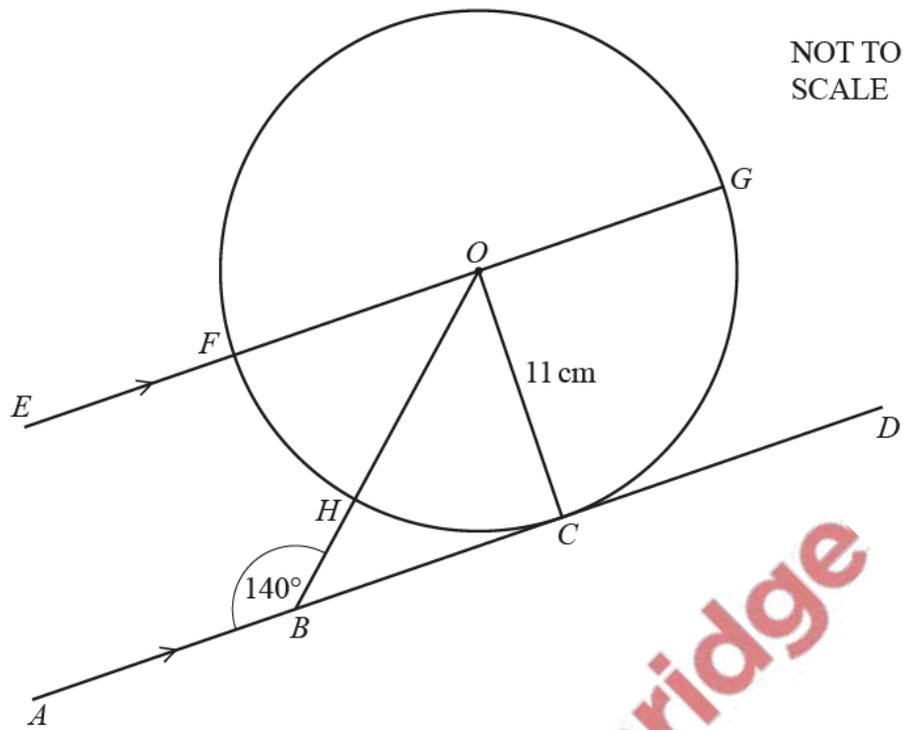


(iii) The triangle is the cross-section of a prism with length 6 cm.

Calculate the volume of the prism.

..... cm³ [2]





NOT TO SCALE

The diagram shows a circle, center O , radius 11 cm.
 C , F , G , and H are points on the circumference of the circle.
 The line AD touches the circle at C and is parallel to the line EG .
 B is a point on AD and angle $ABO = 140^\circ$.

(a) Write down the mathematical name of the straight line AD .

..... [1]

(b) (i) Calculate the circumference of the circle.

..... cm [2]

(ii) Work out angle FOH .

Angle $FOH =$ [2]

(ii) Calculate the length of the minor arc FH .

..... cm [2]

(c) (i) Give a reason why angle BCO is 90° .

..... [1]

(ii) Show that $BC = 13.11$ cm, correct to 2 decimal places.

(iii) Calculate BH .



[3]

$BH =$ cm [3]

Point B is 36 km from point A on a bearing of 140° .

- (a) Using a scale of 1 centimeter to represent 4 kilometers, mark the position of B .



Scale: 1 cm to 4 km

[2]

- (b) (i) Point C is 28 km from A and 20 km from B .
The bearing of C from A is less than 140° .

Using a ruler and compasses only, construct triangle ABC .
Show all your construction arcs.

[3]

- (ii) Measure angle ACB .

Angle $ACB = \dots\dots\dots$ [1]