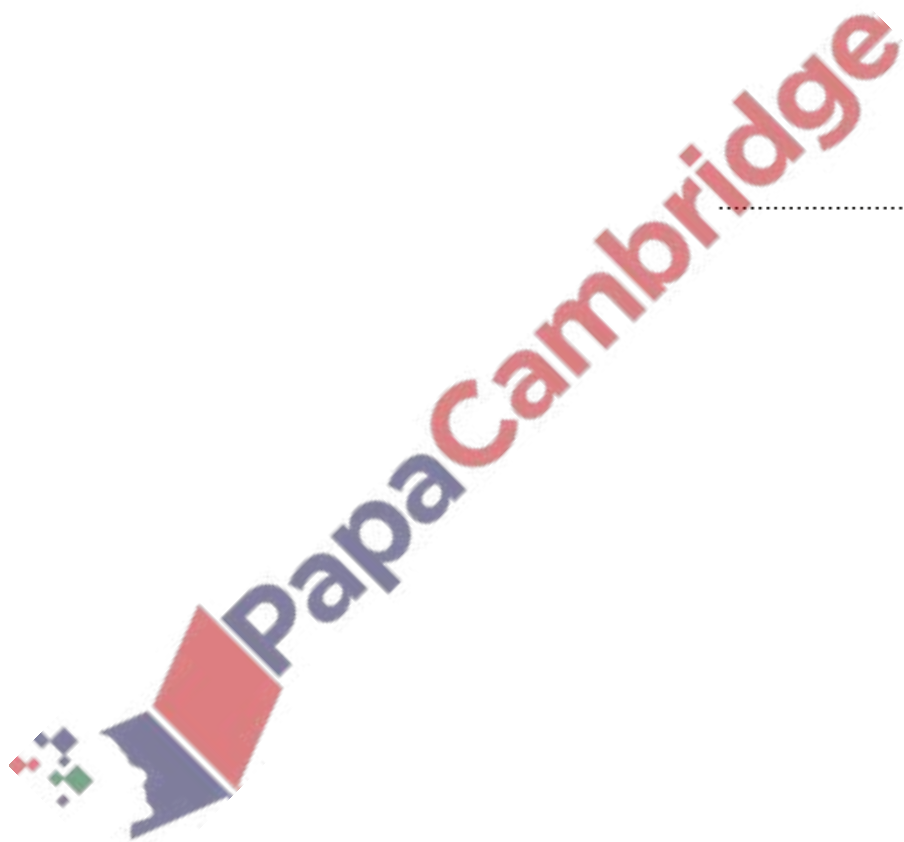


Angles – 2021 O Level Math D

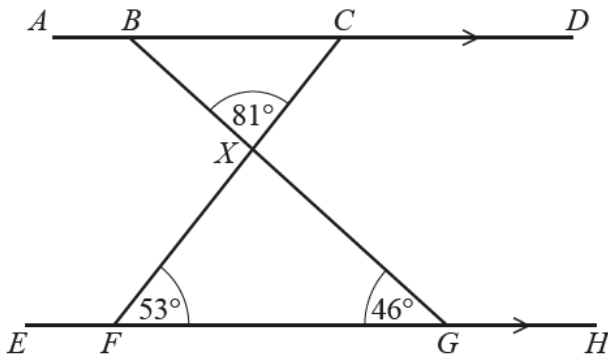
1. Nov/2021/Paper_11/No.9

The interior angle of a regular polygon is 156° .

Find the number of sides of this regular polygon.



..... [2]



NOT TO SCALE

In the diagram, $ABCD$ and $EFGH$ are parallel lines.
 The lines CF and BG intersect at X .
 $\hat{C}FG = 53^\circ$, $\hat{B}GF = 46^\circ$ and $\hat{B}XC = 81^\circ$.

(a) Find $\hat{C}XG$.

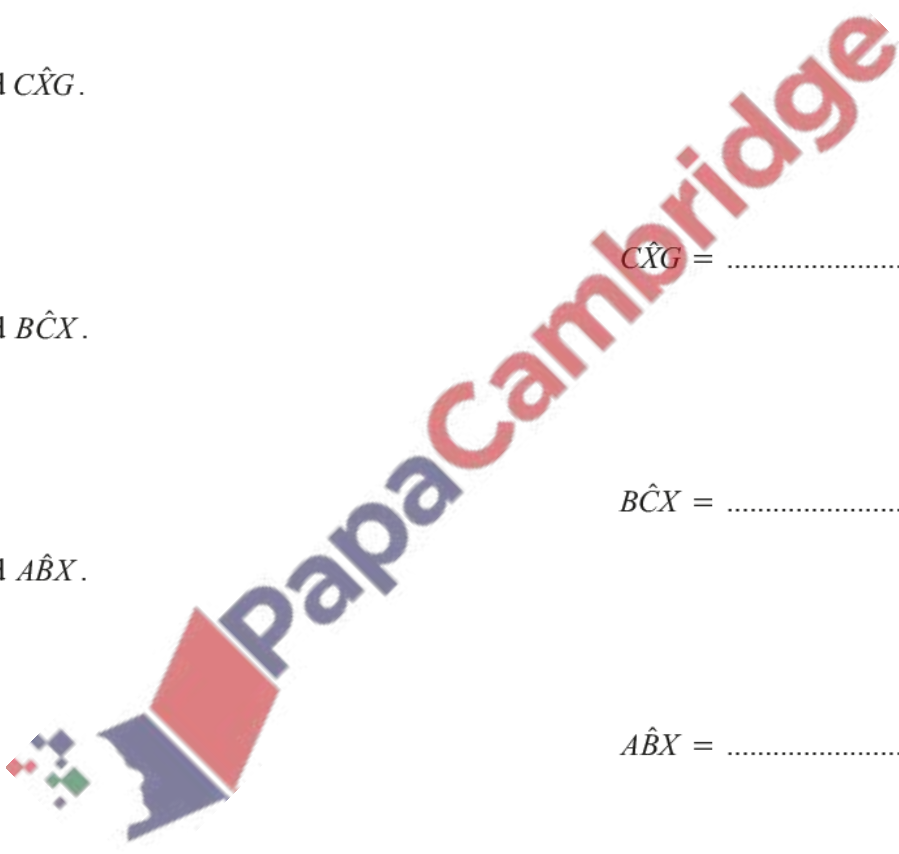
$\hat{C}XG = \dots\dots\dots [1]$

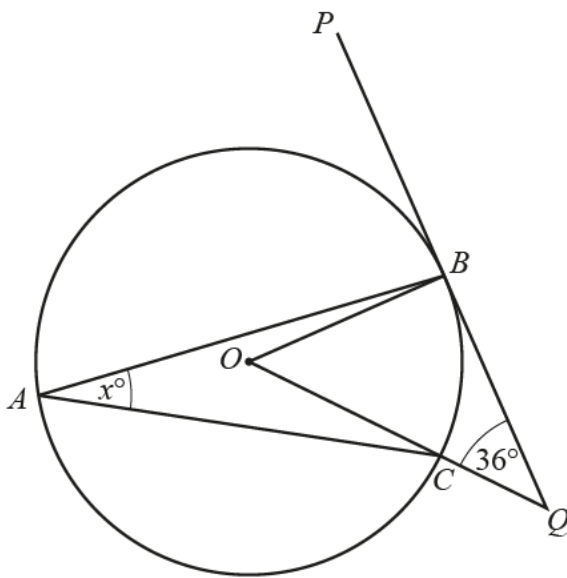
(b) Find $\hat{B}CX$.

$\hat{B}CX = \dots\dots\dots [1]$

(c) Find $\hat{A}BX$.

$\hat{A}BX = \dots\dots\dots [1]$

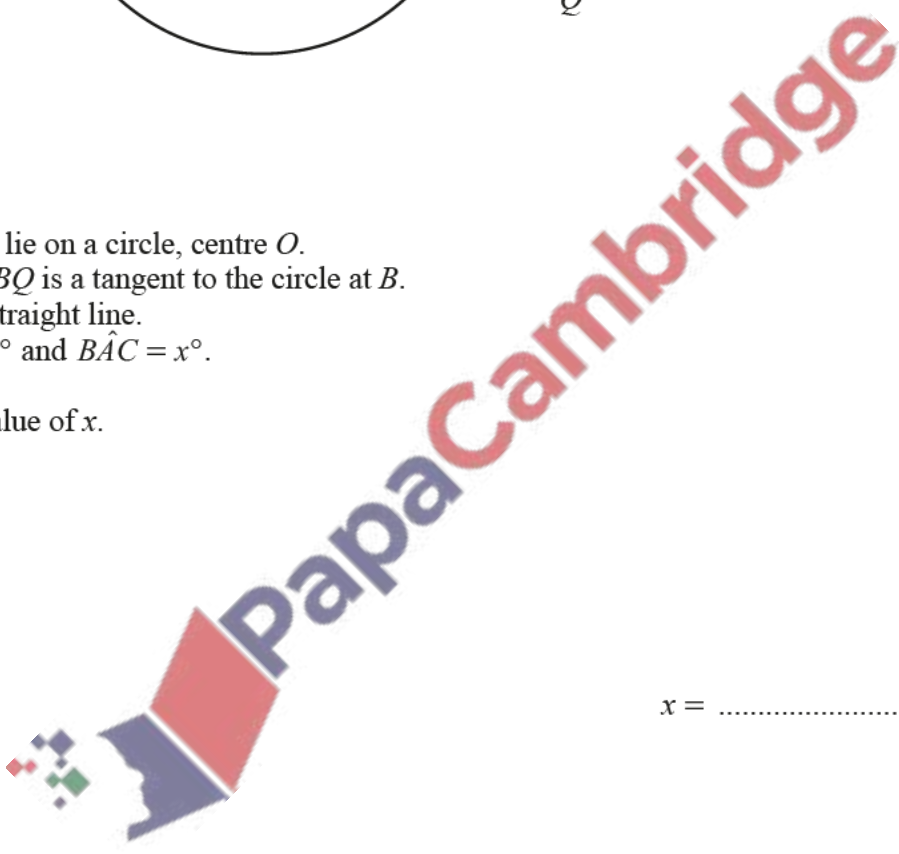




NOT TO
SCALE

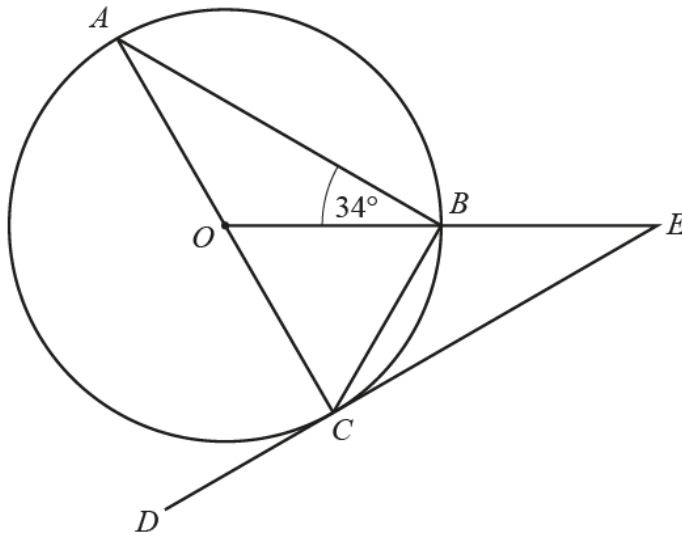
A , B and C lie on a circle, centre O .
The line PBQ is a tangent to the circle at B .
 OCQ is a straight line.
 $BQO = 36^\circ$ and $BAC = x^\circ$.

Find the value of x .



$x = \dots\dots\dots$ [2]

(a)



NOT TO SCALE

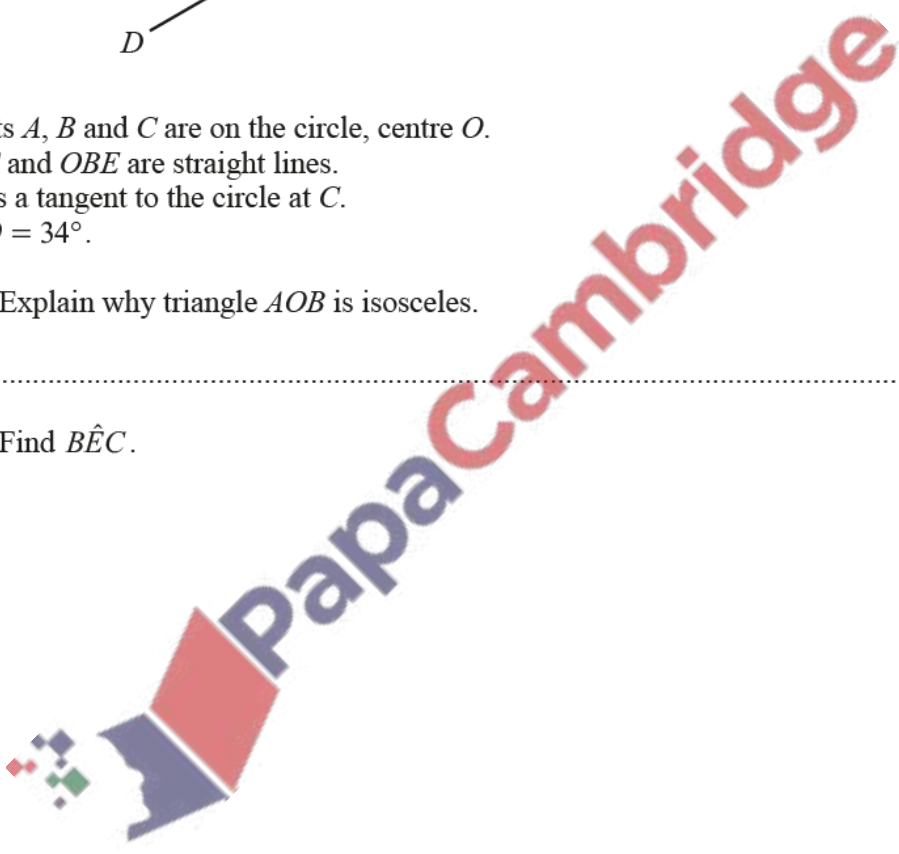
Points A , B and C are on the circle, centre O .
 AOC and OBE are straight lines.
 DE is a tangent to the circle at C .
 $\hat{A}BO = 34^\circ$.

(i) Explain why triangle AOB is isosceles.

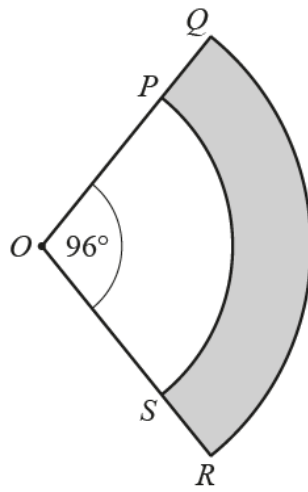
..... [1]

(ii) Find $\hat{B}EC$.

$\hat{B}EC = \dots\dots\dots$ [3]



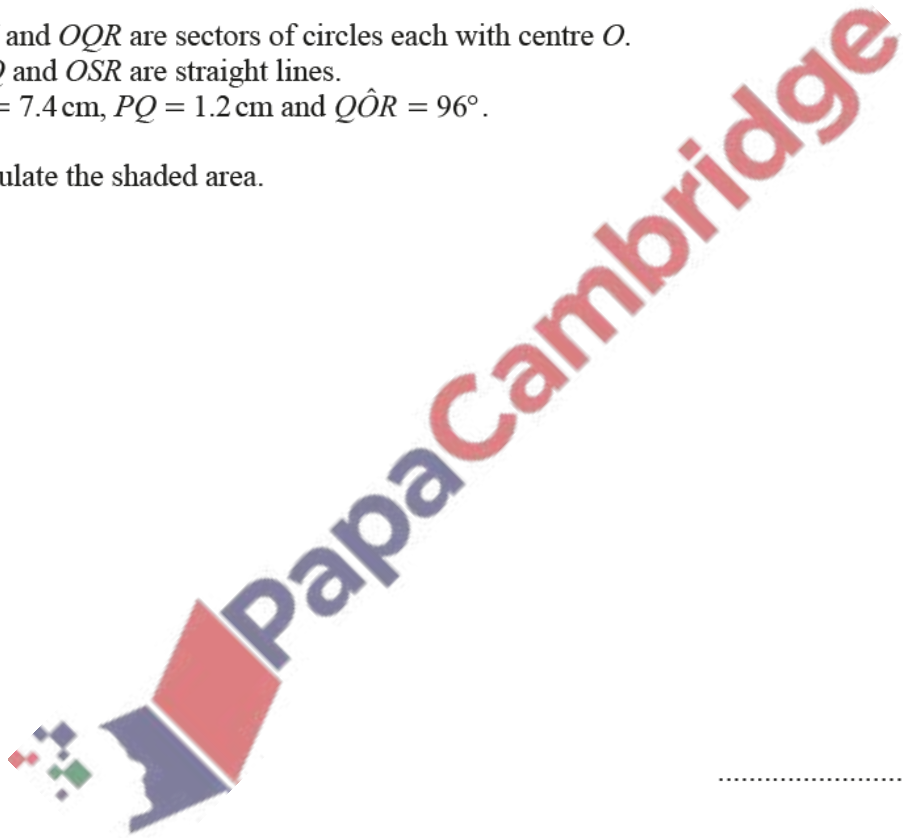
(b)



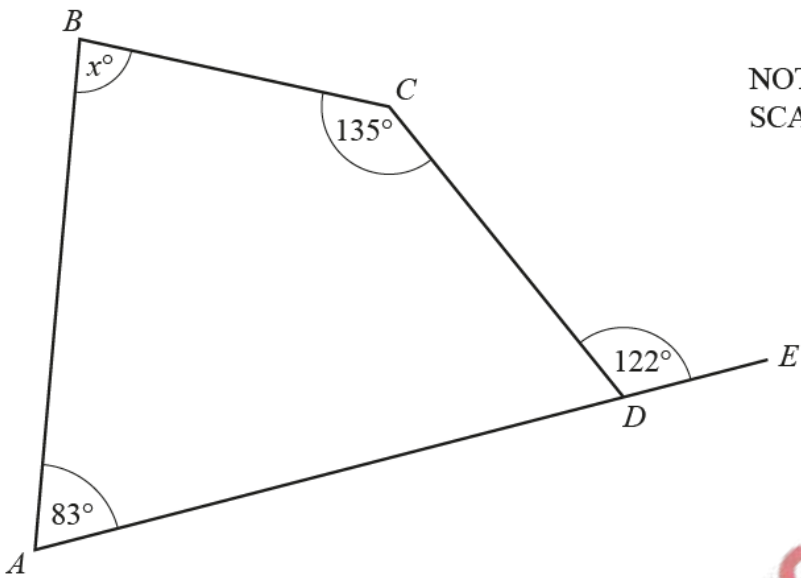
NOT TO
SCALE

OPS and OQR are sectors of circles each with centre O .
 OPQ and OSR are straight lines.
 $OP = 7.4$ cm, $PQ = 1.2$ cm and $\angle OQR = 96^\circ$.

Calculate the shaded area.



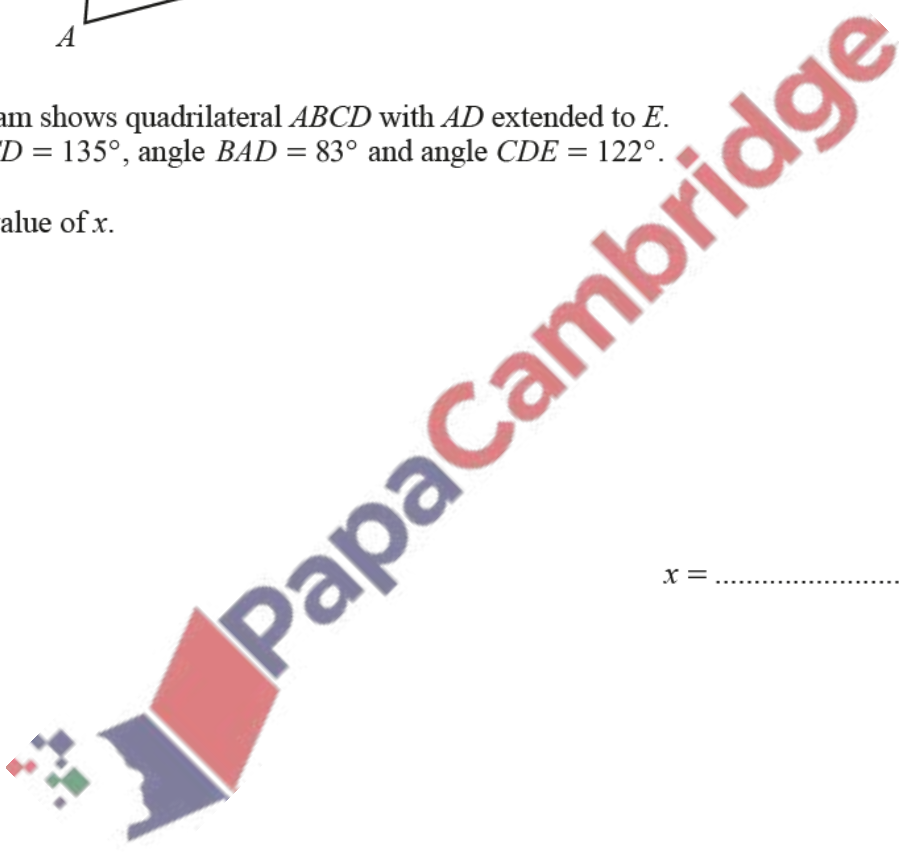
..... cm² [3]



NOT TO
SCALE

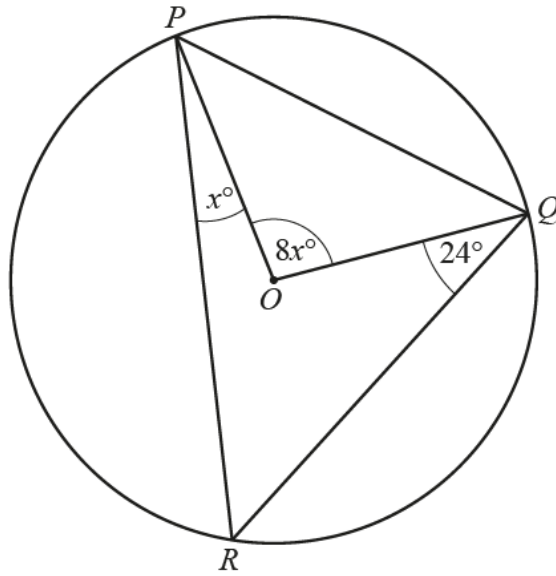
The diagram shows quadrilateral $ABCD$ with AD extended to E .
Angle $BCD = 135^\circ$, angle $BAD = 83^\circ$ and angle $CDE = 122^\circ$.

Find the value of x .



$x = \dots\dots\dots$ [2]

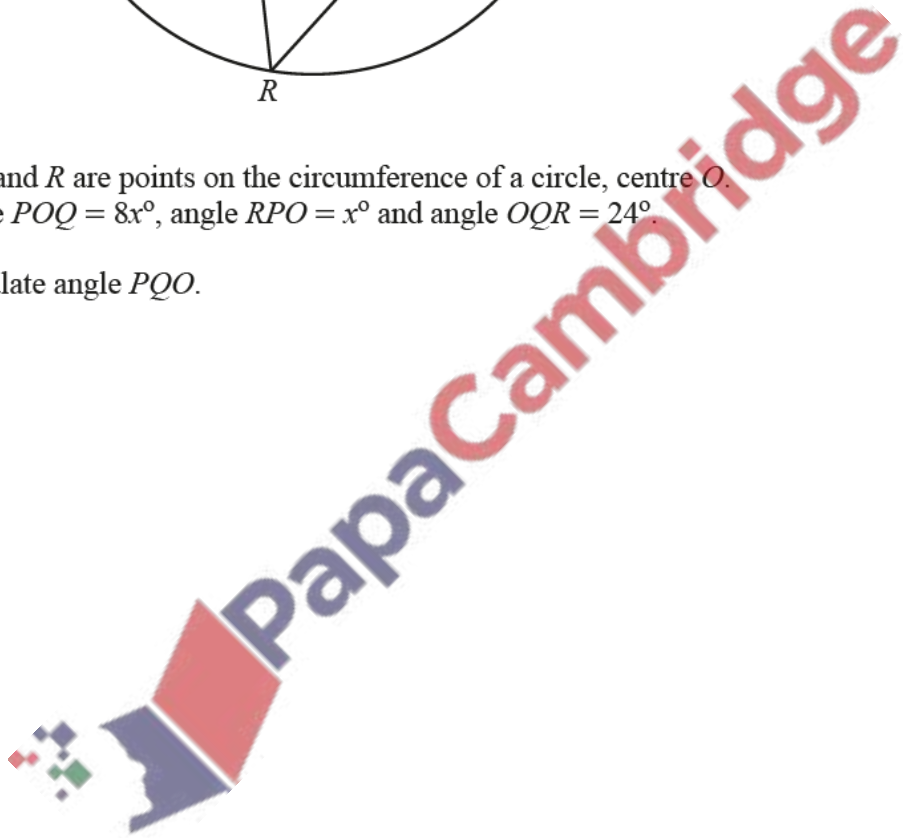
(a)



NOT TO
SCALE

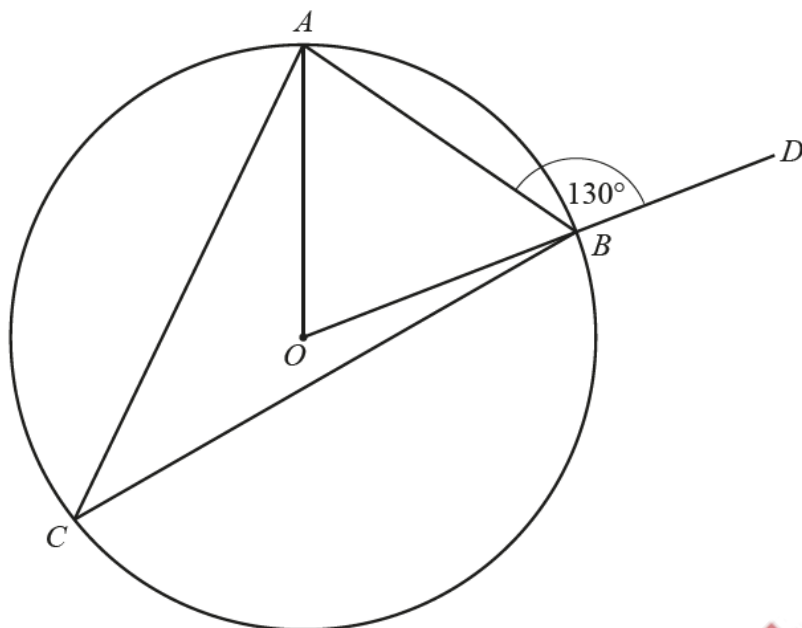
P , Q and R are points on the circumference of a circle, centre O .
Angle $POQ = 8x^\circ$, angle $RPO = x^\circ$ and angle $OQR = 24^\circ$.

Calculate angle PQO .



Angle $PQO = \dots\dots\dots$ [4]

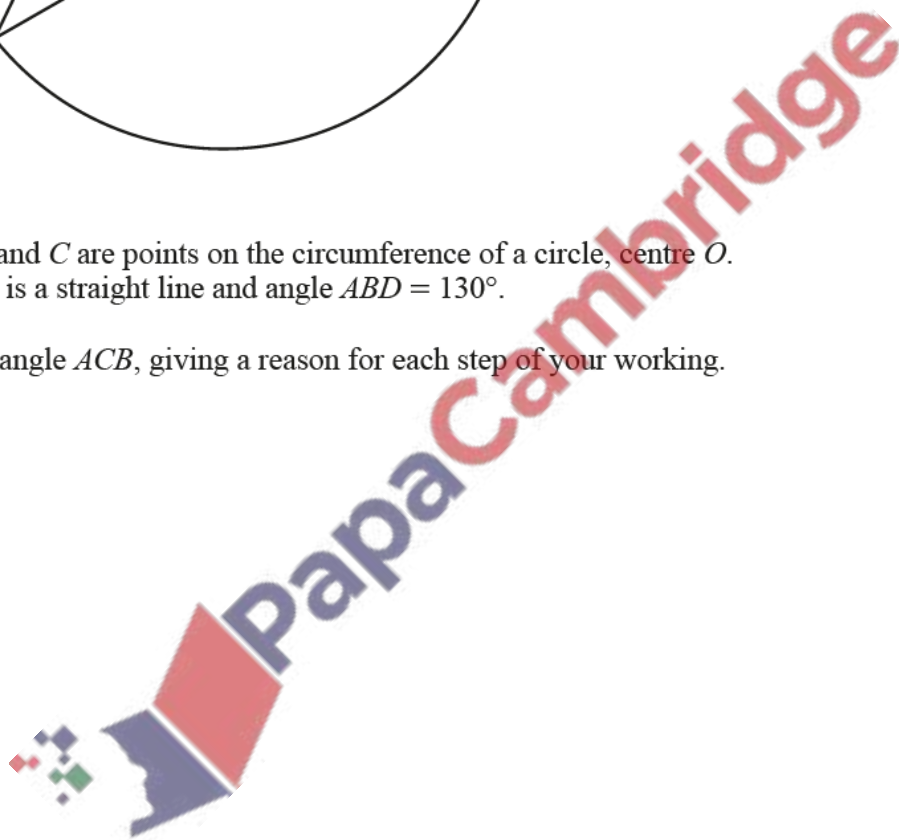
(a)



NOT TO SCALE

A , B and C are points on the circumference of a circle, centre O . OBD is a straight line and angle $ABD = 130^\circ$.

Find angle ACB , giving a reason for each step of your working.



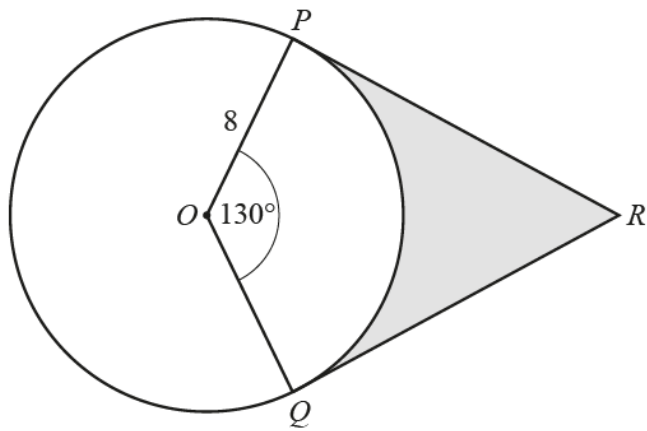
.....

.....

.....

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

(b)



NOT TO
SCALE

P and Q are points on the circumference of a different circle, centre O .
 PR and QR are tangents to the circle at P and Q respectively.
 $OP = 8$ cm and $\hat{POQ} = 130^\circ$.

(i) Find PR .

$PR = \dots\dots\dots$ cm [2]

(ii) Calculate the percentage of quadrilateral $OPRQ$ that is shaded.

$\dots\dots\dots$ % [4]

