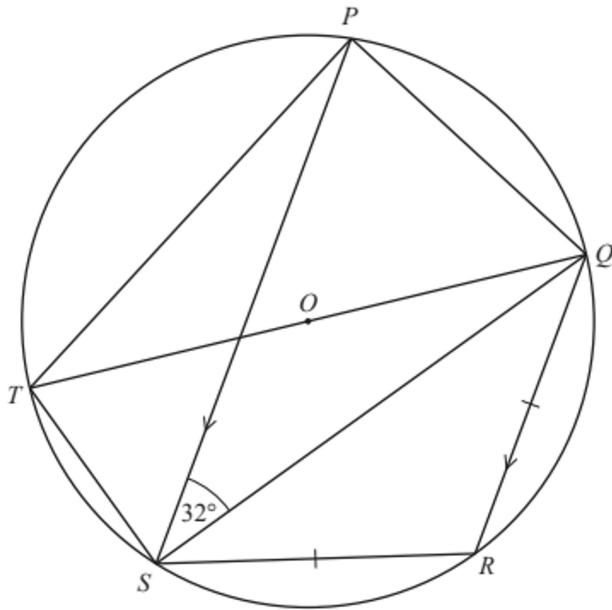


OL Maths T1

Monday, July 28, 2025 3:24 PM

Q1 [6]

(b)



NOT TO
SCALE

P, Q, R, S and T are points on the circumference of a circle, centre O .

$\angle PSQ = 32^\circ$ and O lies on TQ .

PS is parallel to QR and $QR = RS$.

- (i) Find $\angle PQT$.

Give a reason for each step of your working.

.....
.....
.....
 $\angle PQT = \dots \quad [3]$

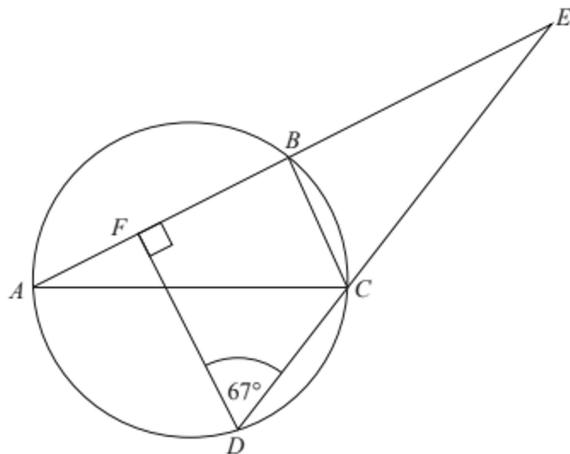
- (ii) Find $\angle QRS$.

.....
 $\angle QRS = \dots \quad [2]$

- (iii) Find $\angle TQS$.

.....
 $\angle TQS = \dots \quad [1]$

Q2 [6]



A, B, C and D are points on the circumference of the circle and AC is a diameter.

$AFBE$ and DCE are straight lines.

DF is perpendicular to AE and $\hat{CDF} = 67^\circ$.

- (i) Find \hat{AED} .

Answer $\hat{AED} = \dots$ [1]

- (ii) Find \hat{CBE} , giving a reason for your answer.

Answer $\hat{CBE} = \dots$ because

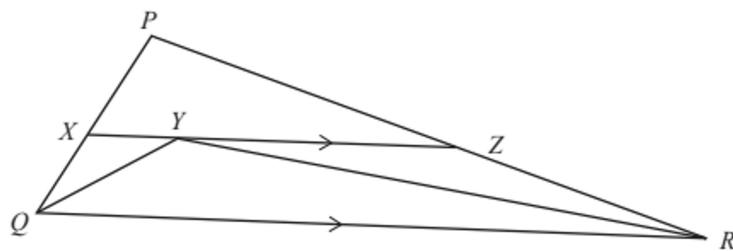
..... [1]

- (iii) Explain why DF is parallel to CB .

Answer

..... [1]

(b)



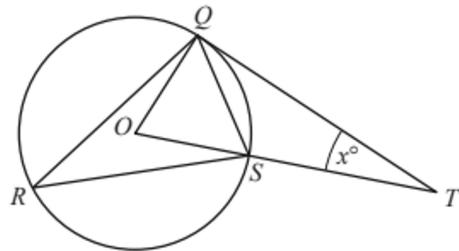
In the triangle PQR , the bisectors of $P\hat{Q}R$ and $P\hat{R}Q$ intersect at Y .
The straight line XYZ is parallel to QR .

Prove that the perimeter of triangle $PXZ = PQ + PR$.

[3]

Q3 [6]

(b)



Q, R and S are points on a circle, centre O .
 QT is the tangent at Q and $Q\hat{T}O = x^\circ$.

(i) (a) Show that $Q\hat{R}S$ is $\frac{1}{2}(90 - x)$.

[1]

(b) Find an expression, in terms of x , for $O\hat{Q}S$.

Answer [2]

(ii) It is given that three times $\hat{Q}RS$ is twice \hat{OQS} .

(a) Show that $180 + 2x = 270 - 3x$.

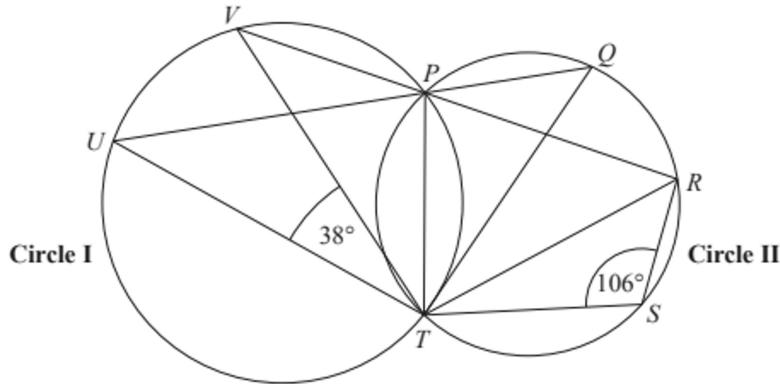
[2]

(b) Hence find \hat{QTO} .

Answer [1]

Q4 [7]

(a)

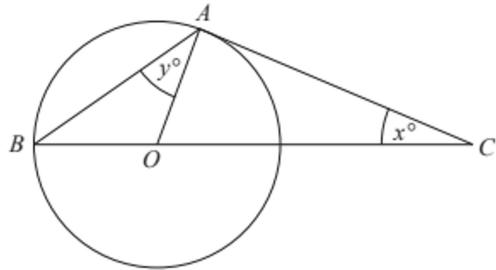


The points P, T, U and V lie on **Circle I**, and the points P, Q, R, S and T lie on **Circle II**.
 UPQ and VPR are straight lines.
 $\hat{UTU} = 38^\circ$ and $\hat{TSR} = 106^\circ$.

Find

- | | |
|---------------------|-----|
| (i) \hat{VPU} , | [1] |
| (ii) \hat{QTR} , | [1] |
| (iii) \hat{TPR} , | [1] |
| (iv) \hat{UPT} . | [1] |

(b)

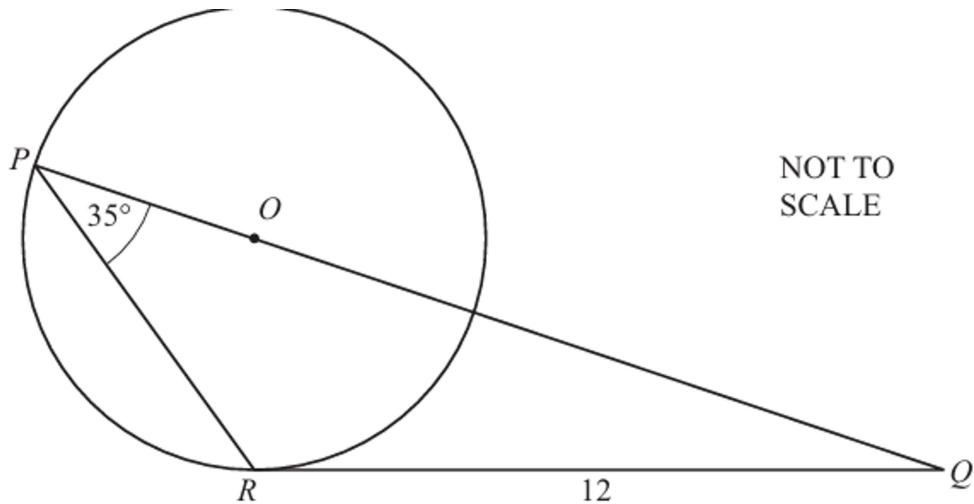


A and B are points on the circle, centre O.
CA is a tangent at A and BOC is a straight line.
 $\hat{ACB} = x^\circ$ and $\hat{BAO} = y^\circ$.

Find an expression for y in terms of x.

[3]

Q5(6)



PQR is a triangle.

P and R are points on a circle, centre O.

O is a point on PQ.

QR is a tangent to the circle at R.

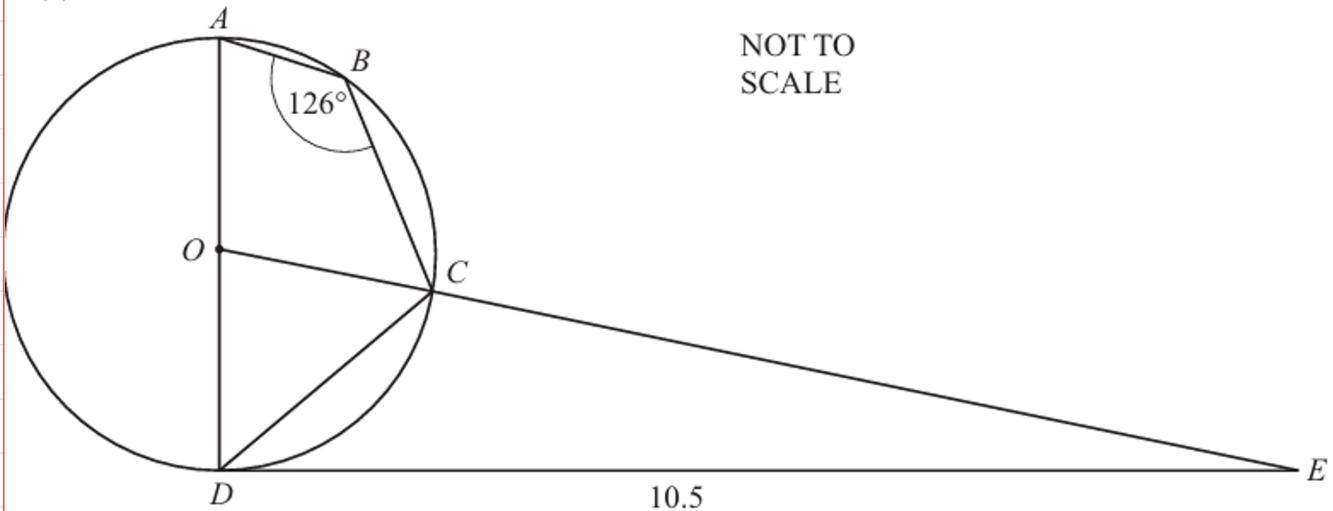
QR = 12 cm and angle RPQ = 35°.

Calculate the area of triangle PQR.

..... cm² [6]

Q6[5]

(a)



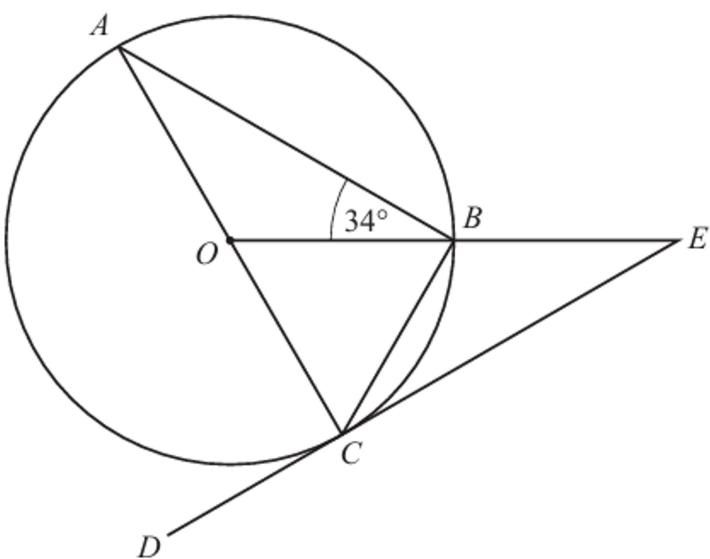
A, B, C and D are points on a circle, centre O .
 AOD and OCE are straight lines.
 DE is a tangent to the circle at D .
Angle $ABC = 126^\circ$ and $DE = 10.5$ cm.

Calculate the radius of the circle.

..... cm [5]

Q7 [4]

(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 .

$A\hat{B}O = 34^\circ$.

- (i) Explain why triangle AOB is isosceles.

..... [1]

- (ii) Find $B\hat{E}C$.

$B\hat{E}C = \dots$ [3]