

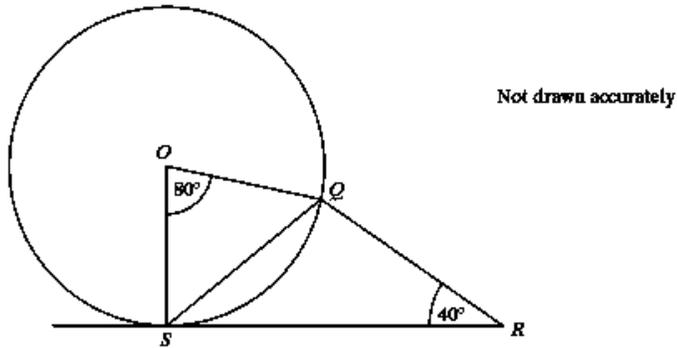
Circle Theorems Exam Questions

In the diagram below points Q and S lie on a circle centre O .

SR is a tangent to the circle at S . Angle $QRS = 40^\circ$ and angle $SOQ = 80^\circ$

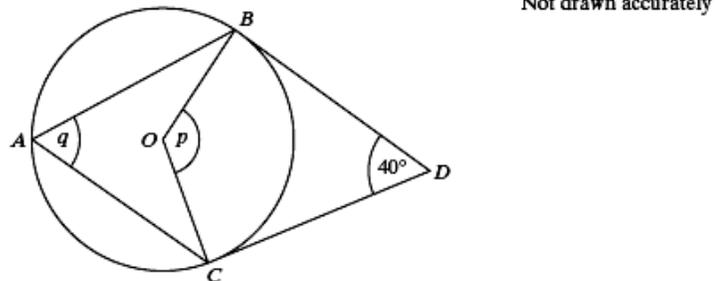
Prove that triangle QSR is isosceles.

(3 marks)



A , B and C are points on the circumference of a circle with centre O .

BD and CD are tangents. Angle $BDC = 40^\circ$



(i) Work out the value of p .

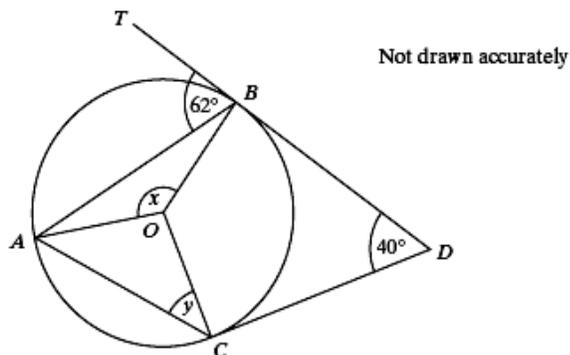
(2 marks)

(ii) Hence write down the value of q .

(1 mark)

The tangent DB is extended to T .

The line AO is added to the diagram. Angle $TBA = 62^\circ$



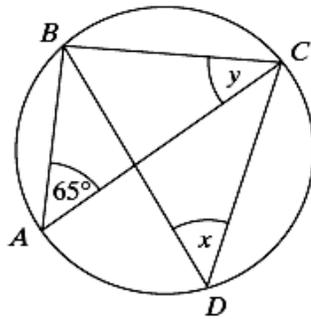
(i) Work out the value of x .

(2 marks)

(ii) Work out the value of y .

(2 marks)

A, B, C and D are points on the circumference of a circle.
 AC is a diameter of the circle. Angle $BAC = 65^\circ$

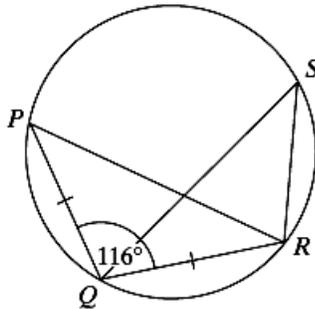


Not drawn accurately

- (a) Write down the value of x .
 (b) Calculate the value of y .

(1 mark)
 (1 mark)

Points P, Q, R and S lie on a circle. $PQ = QR$ Angle $PQR = 116^\circ$



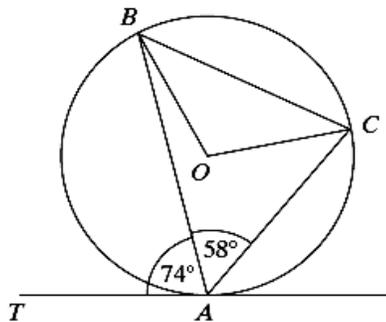
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Explain why angle $QSR = 32^\circ$.

(2 marks)

The diagram shows a circle, centre O .

TA is a tangent to the circle at A . Angle $BAC = 58^\circ$ and angle $BAT = 74^\circ$.



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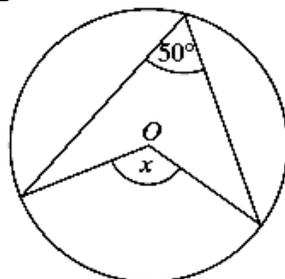
- (i) Calculate angle BOC .
 (ii) Calculate angle OCA .

(1 mark)
 (3 marks)

The diagram shows a circle with centre O .

Work out the size of the angle marked x .

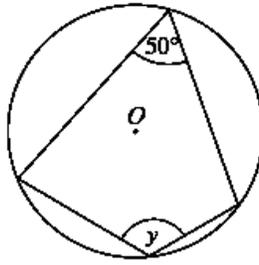
(1 mark)



Not drawn accurately

The diagram shows a different circle with centre O .
Work out the size of the angle marked y .

(1 mark)



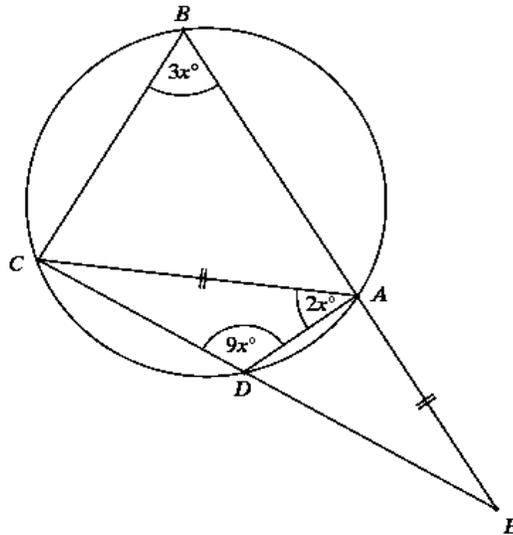
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The diagram shows a cyclic quadrilateral $ABCD$.

The straight lines BA and CD are extended and meet at E .

$EA = AC$ Angle $ABC = 3x^\circ$ Angle $ADC = 9x^\circ$ Angle $DAC = 2x^\circ$

Not drawn accurately

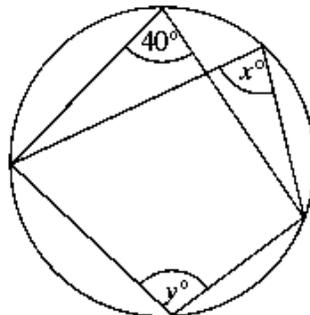


(i) Show that $x = 15$

(2 marks)

(ii) Calculate the size of angle EAD .

(4 marks)



Not drawn accurately

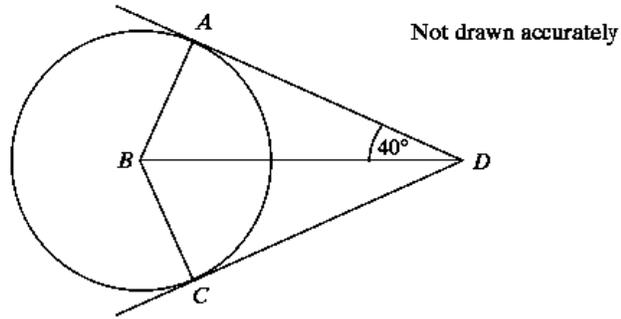
(i) Write down the value of x .

(1 mark)

(ii) Calculate the value of y .

(1 mark)

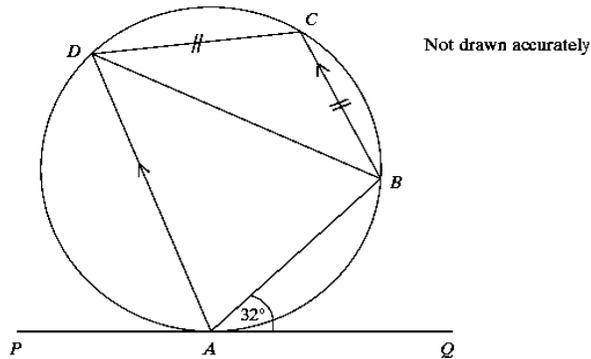
A and C are points on the circumference of a circle centre B .
 AD and CD are tangents. Angle $ADB = 40^\circ$.



Explain why angle ABC is 100° .

(2 marks)

$ABCD$ is a cyclic quadrilateral. PAQ is a tangent to the circle at A .
 $BC = CD$. AD is parallel to BC . Angle $BAQ = 32^\circ$.



Find the size of angle BAD . You **must** show all your working.

(5 marks)