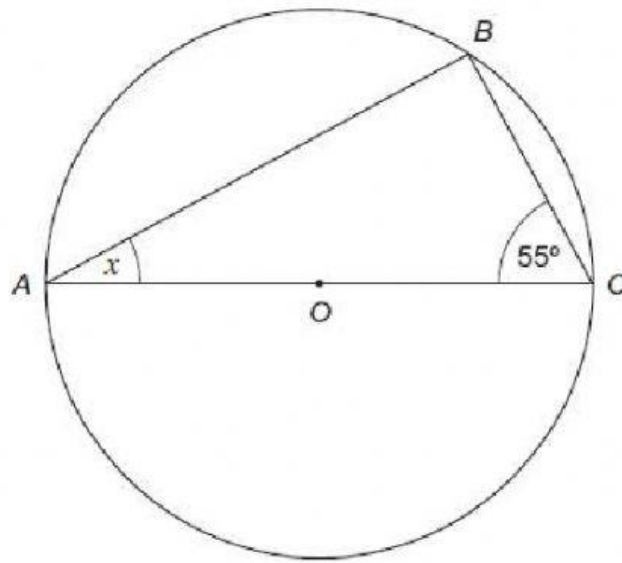


**Q1.(a)**  $A$ ,  $B$  and  $C$  are points on the circumference of a circle with centre  $O$ .

Not drawn  
accurately



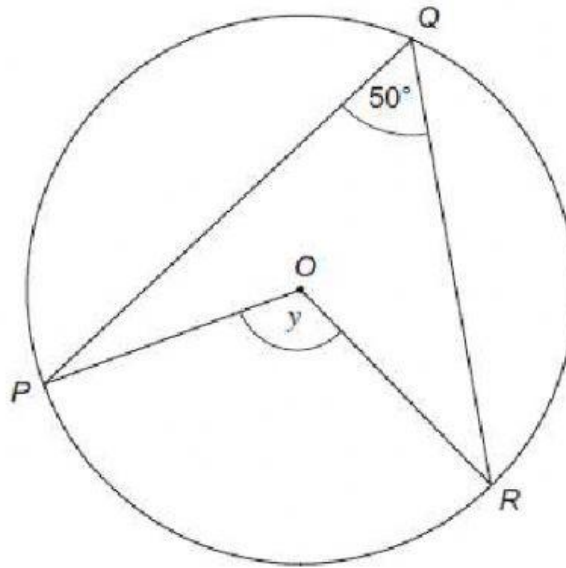
Work out the size of angle  $x$ .

Answer ..... degrees

(1)

- (b)  $P$ ,  $Q$  and  $R$  are points on the circumference of a circle with centre  $O$ .

Not drawn  
accurately



Work out the size of angle  $y$ .  
Give a reason for your answer.

Answer ..... degrees

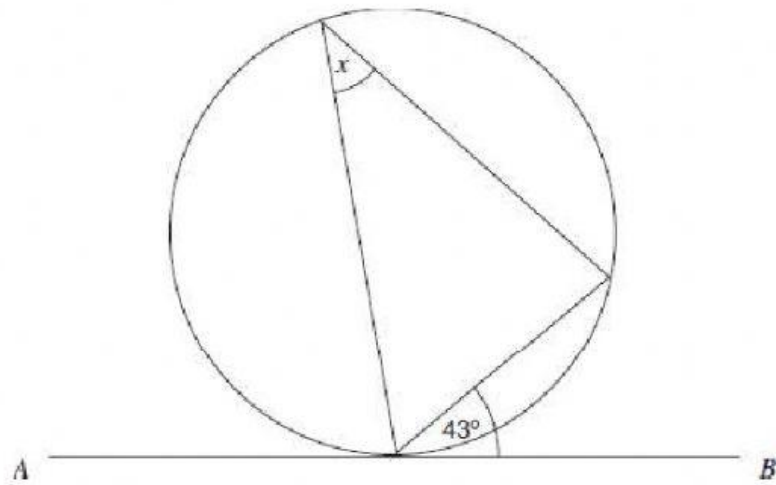
Reason .....

.....

(2)  
(Total 3 marks)

**Q2.**  $AB$  is a tangent to the circle.

Not drawn accurately



Write down the value of  $x$ .  
Give a reason for your answer.

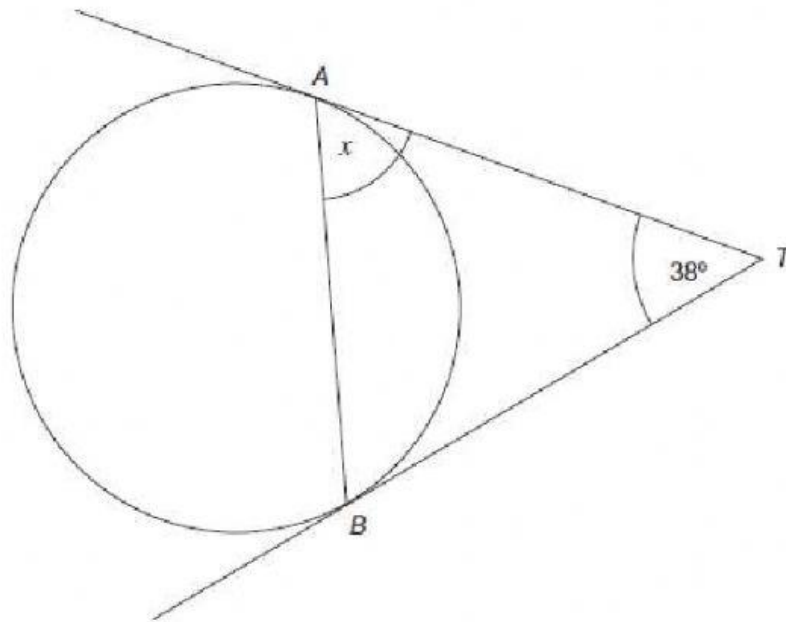
Answer ..... degrees

Reason .....  
(Total 2 marks)

Q3.

- (a)  $AB$  is a chord of the circle.  
 $TA$  and  $TB$  are tangents to the circle.

Not drawn accurately

Work out the size of angle  $x$ .

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.....

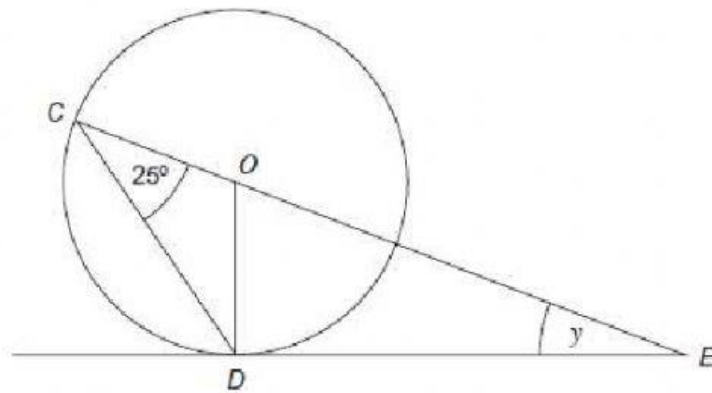
.....

Answer ..... degrees

(2)

- (b) The diagram shows a circle, centre  $O$ .  
 $C$  and  $D$  are points on the circumference.  
 $COE$  is a straight line.  
 $DE$  is a tangent.

Not drawn accurately



Work out the size of angle  $y$ .

You **must** show your working, which may be on the diagram.

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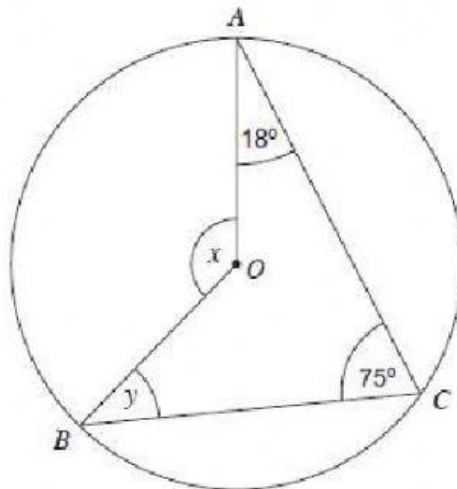
.....

Answer ..... degrees

(3)  
(Total 5 marks)

**Q4.** The diagram shows a circle, centre  $O$ .

Not drawn  
accurately



- (a) Work out the size of angle  $x$ .

.....

Answer ..... degrees

(1)

- (b) Work out the size of angle  $y$ .

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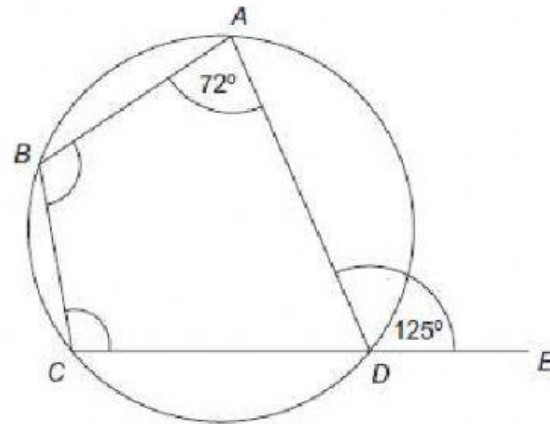
Answer ..... degrees

(3)  
(Total 4 marks)

Q5.

Points  $A$ ,  $B$ ,  $C$  and  $D$  are on the circumference of the circle.  
 $CDE$  is a straight line.

Not drawn accurately



- (a) Work out the size of angle  $BCD$ .  
 Give a reason for your answer.

Answer ..... degrees

Reason .....

(2)

- (b) Work out the size of angle  $ABC$ .

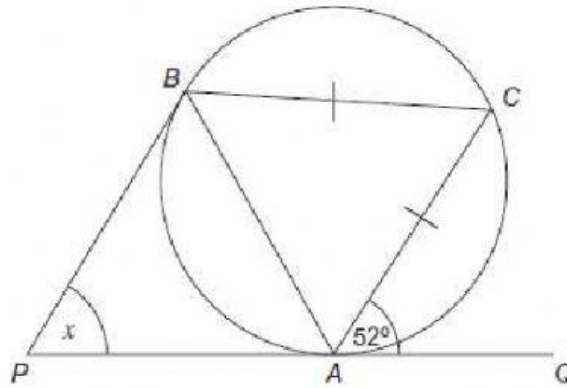
.....

Answer ..... degrees

(1)  
 (Total 3 marks)

**Q6.** $PAQ$  and  $PB$  are tangents to the circle. $AC = BC$ 

Not drawn accurately

Work out the size of angle  $x$ .You **must** show your working which may be on the diagram.

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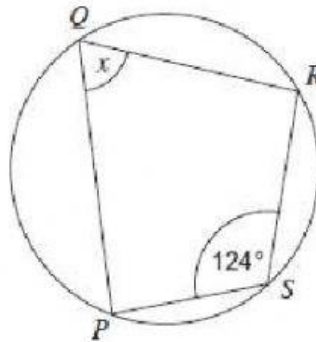
Answer ..... degrees

(Total 4 marks)



**Q7.(a)**  $P, Q, R$  and  $S$  are points on the circumference of the circle.

Not drawn accurately



Work out the size of angle  $x$ .

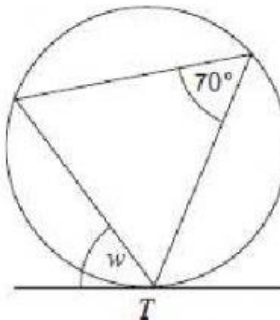
.....

Answer ..... degrees

(1)

(b) The diagram shows a circle and a tangent at  $T$ .

Not drawn accurately



Write down the size of angle  $w$ .  
Give a reason for your answer.

Answer ..... degrees

Reason .....

(2)