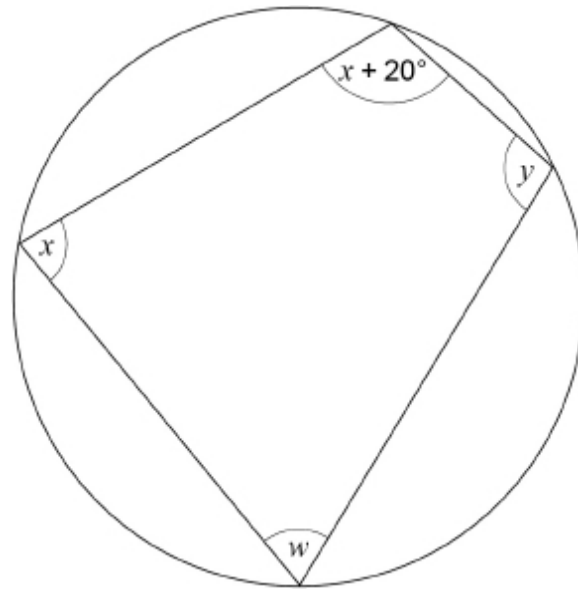


Non-Calculator

Q1.

Here is a cyclic quadrilateral.



Not drawn accurately

$$x : y = 5 : 7$$

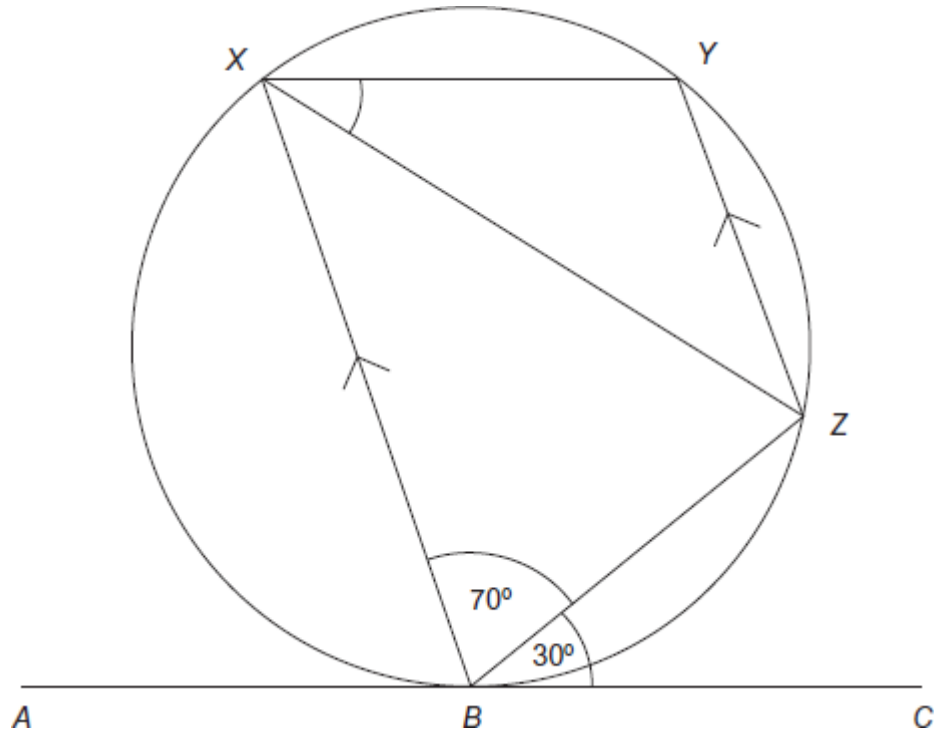
Work out the size of angle w .

Answer _____ degrees
(Total 4 marks)

Q2.

B, X, Y and Z are points on the circumference of a circle.
 ABC is a tangent to the circle.
 BX is parallel to ZY .

Not drawn accurately



Work out the size of angle ZXY .

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

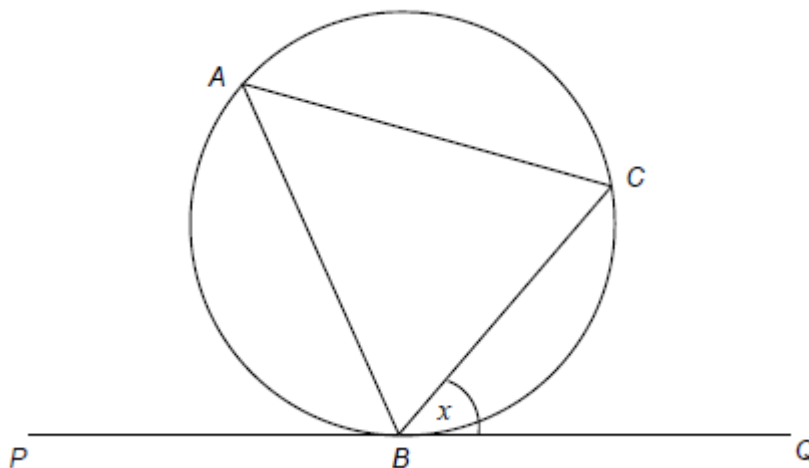
Answer _____ degrees
(Total 3 marks)

Q3.

A , B and C are points on a circle.

- BC bisects angle ABQ .
- PBQ is a tangent to the circle.

Not drawn accurately



Angle $CBQ = x$

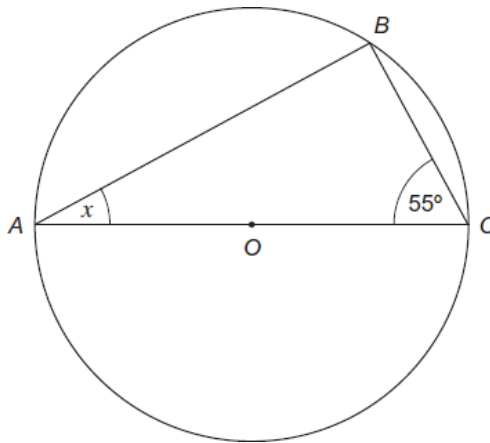
Prove that $AC = BC$

(Total 3 marks)

Q4.

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

Not drawn accurately



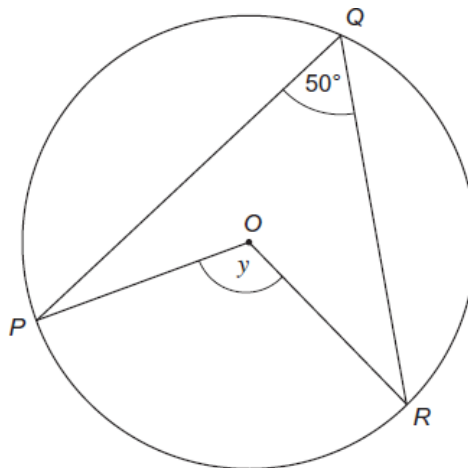
Work out the size of angle x .

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)

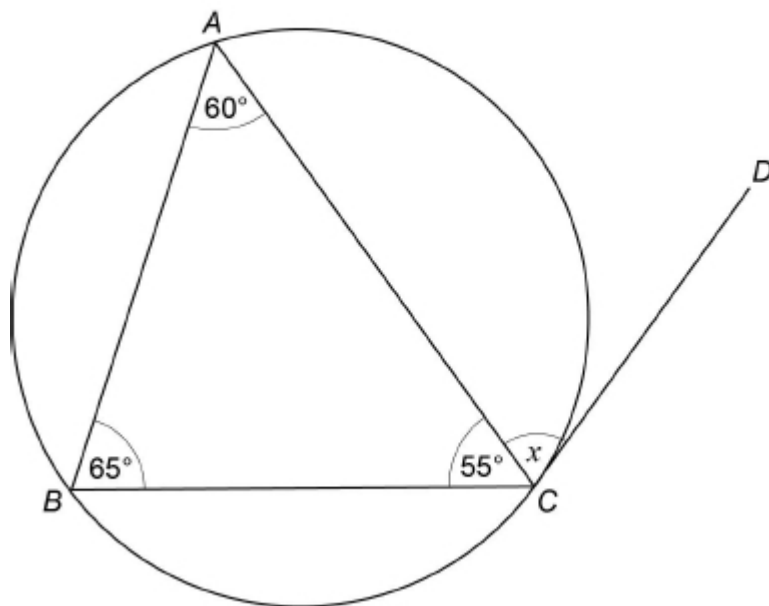
(Total 3 marks)

Q6.

A , B and C are points on a circle.

CD is a tangent to the circle.

Not drawn
accurately



Write down the size of angle x .

Give a reason for your answer.

Answer _____ degrees

Reason _____

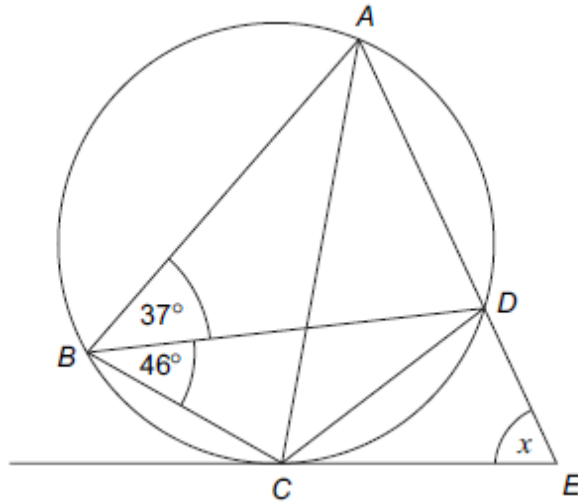
(Total 2 marks)

Q7.

The diagram shows a cyclic quadrilateral $ABCD$.

ADE is a straight line.

CE is a tangent to the circle.



Not drawn
accurately

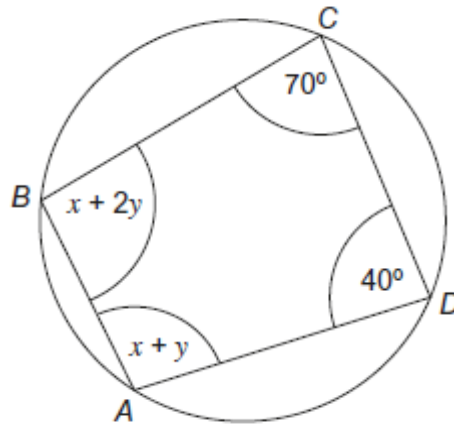
Work out the size of angle x .

$x =$ _____ degrees
(Total 3 marks)

Q8.

$ABCD$ is a cyclic quadrilateral.

Not drawn accurately



Work out x and y .

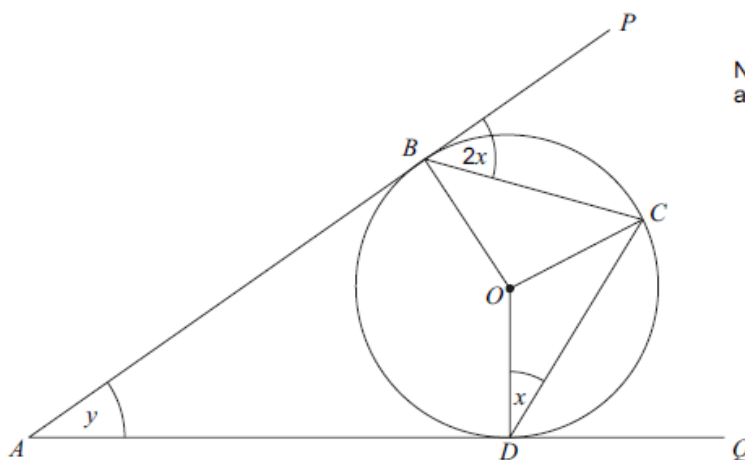
$x =$ _____ degrees

$y =$ _____ degrees

(Total 4 marks)

Q9.

ABP and ADQ are tangents to the circle, centre O .
 C lies on the circumference of the circle.



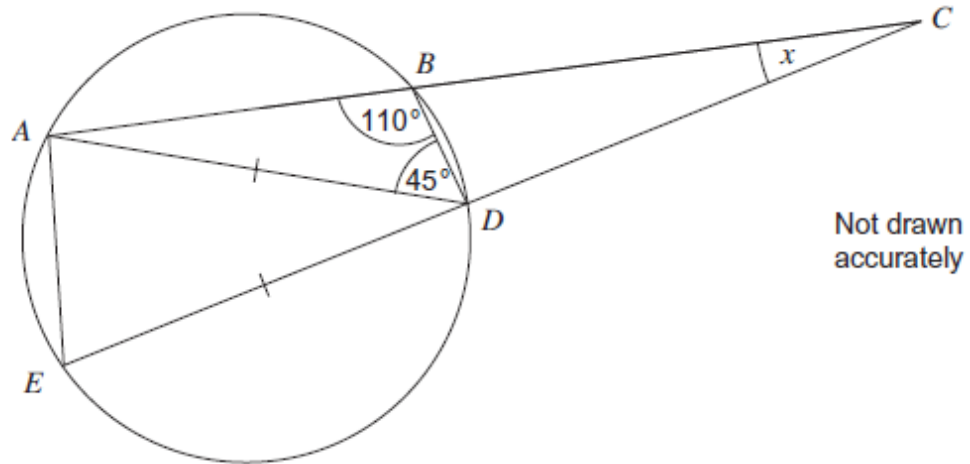
Prove that $y = 2x$

Give reasons for any statements you make.

(Total 6 marks)

Q10.

ABC and EDC are straight lines.
 $AD = ED$



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

Answer _____ degrees

Reason _____

_____ (2)

- (b) Work out x .

Answer _____ degrees

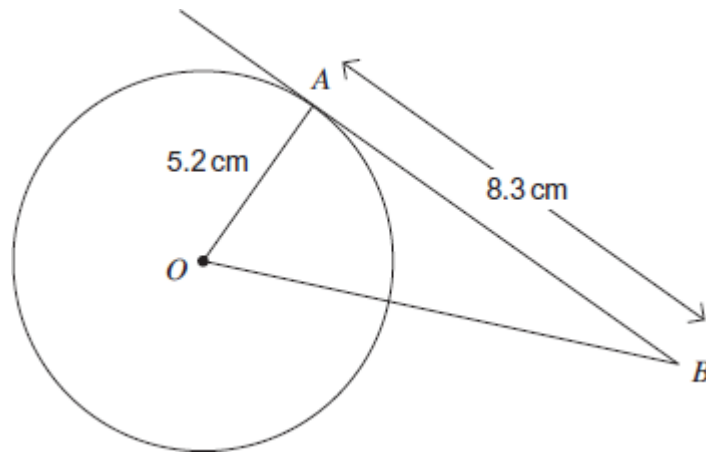
(4)

(Total 6 marks)

Q11.

The diagram shows a circle, centre O .
 AB is a tangent.

Not drawn
accurately



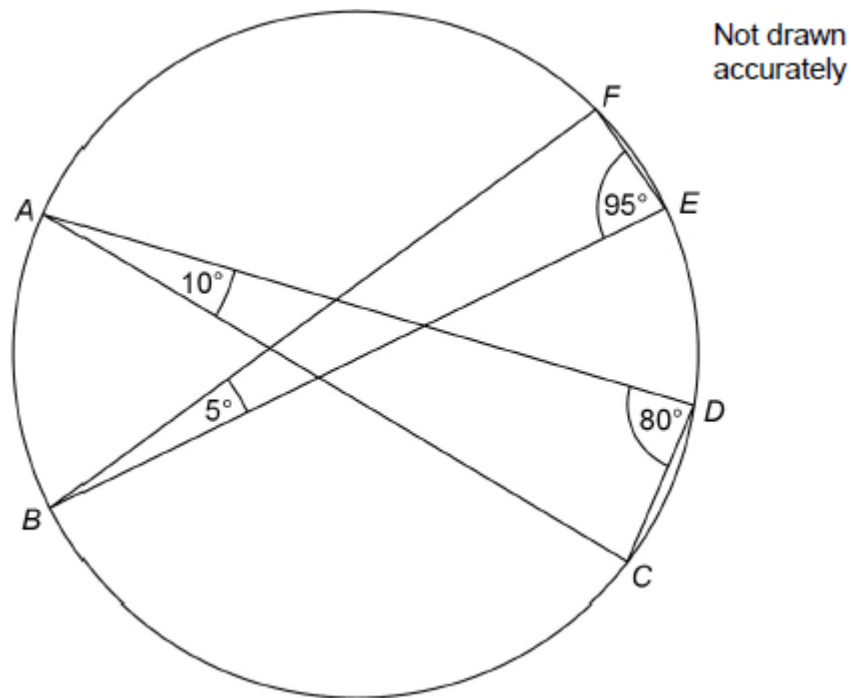
Work out the length OB .

Answer _____ cm

(Total 4 marks)

Q12.

A, B, C, D, E and F are points on a circle.



Circle the line that is a diameter of the circle.

BE

AD

AC

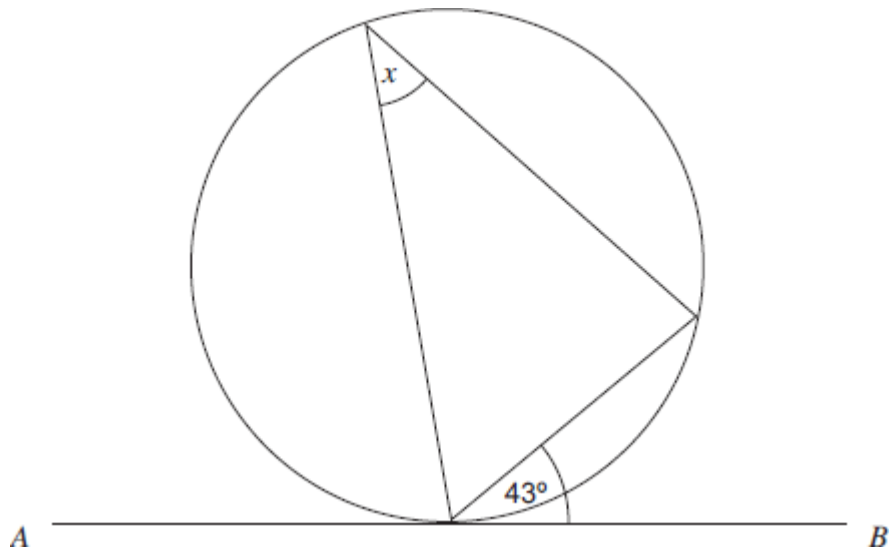
BF

(Total 1 mark)

Q13.

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 _____

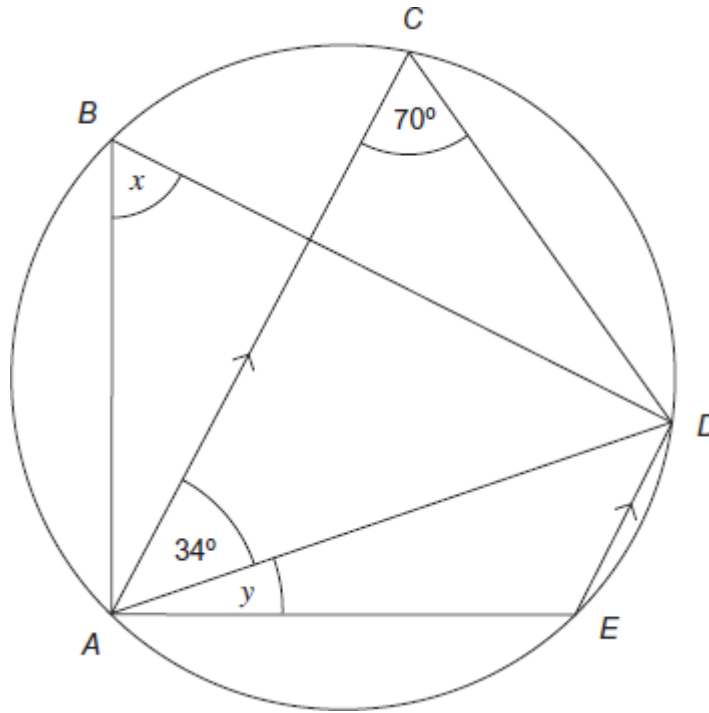
(Total 2 marks)

Q14.

A, B, C, D and E are points on a circle.

AC is parallel to ED .

Not drawn accurately



- (a) Write down the size of angle x .

Answer _____ degrees

(1)

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

Answer _____ degrees

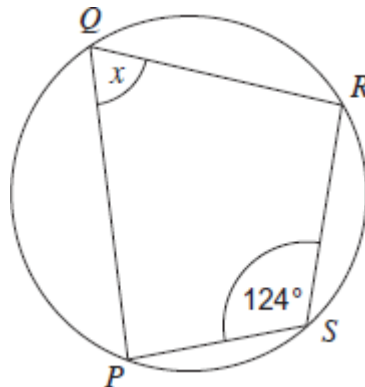
(3)

(Total 4 marks)

Q15.

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

Not drawn accurately



Work out the size of angle x .

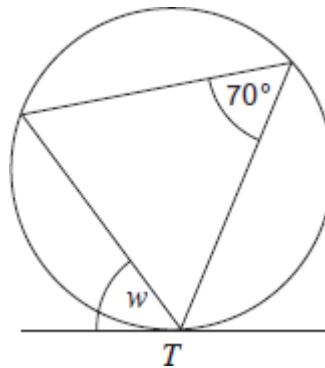
_____ degrees

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.

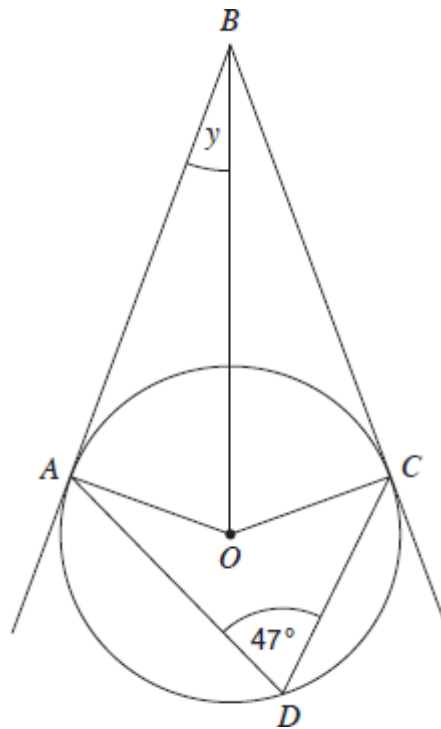
Answer _____ degrees

Reason _____

(2)

- (c) A , C and D are points on the circle, centre O .
 BA and BC are tangents to the circle.

Not drawn accurately



Work out the size of the angle y .

Answer _____ degrees

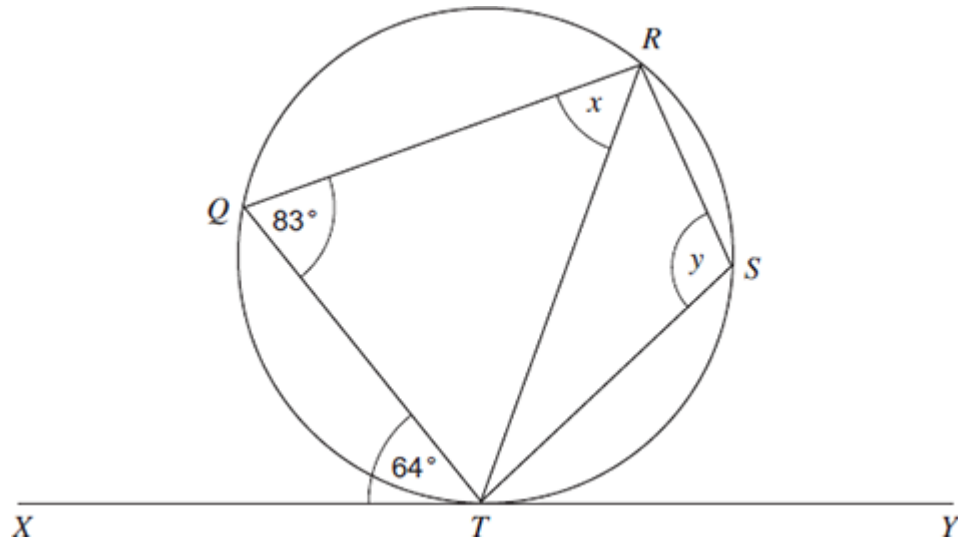
(3)

(Total 6 marks)

Q16.

XTY is a tangent to the circle.

Not drawn accurately



- (a) Write down the value of x .
Give a reason for your answer.

Answer _____ degrees

Reason _____

(2)

- (b) Work out the value of y .

Answer _____ degrees

(1)

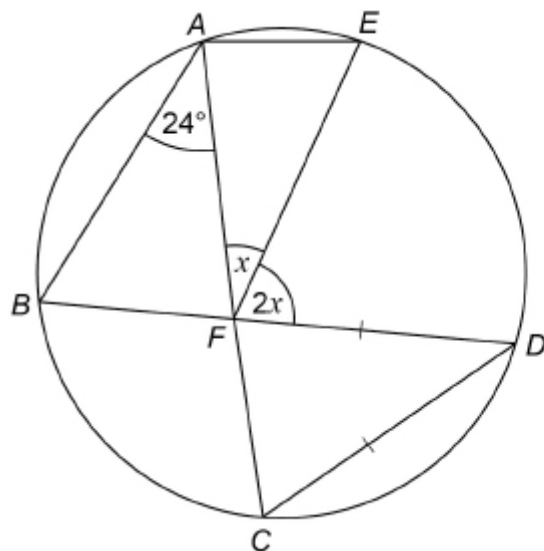
(Total 3 marks)

Q17.

A, B, C, D and E are points on a circle.

BFD and AFC are straight lines.

$DC = DF$



Not drawn accurately

Work out the size of angle x .

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

Answer _____ degrees
(Total 4 marks)