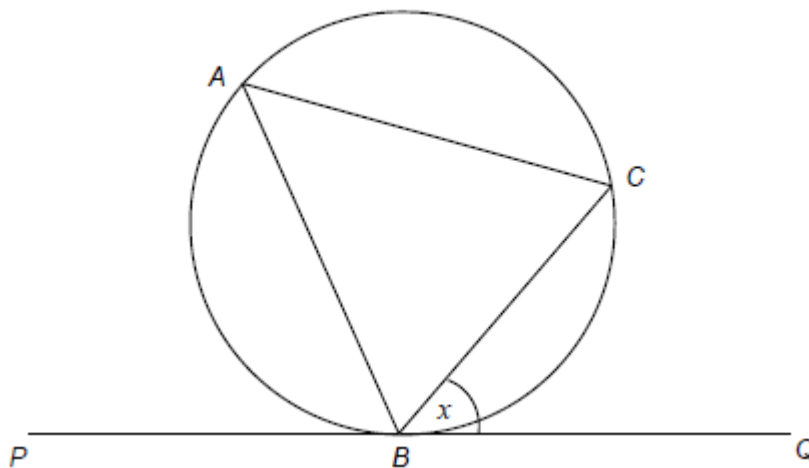**Q1.**

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*

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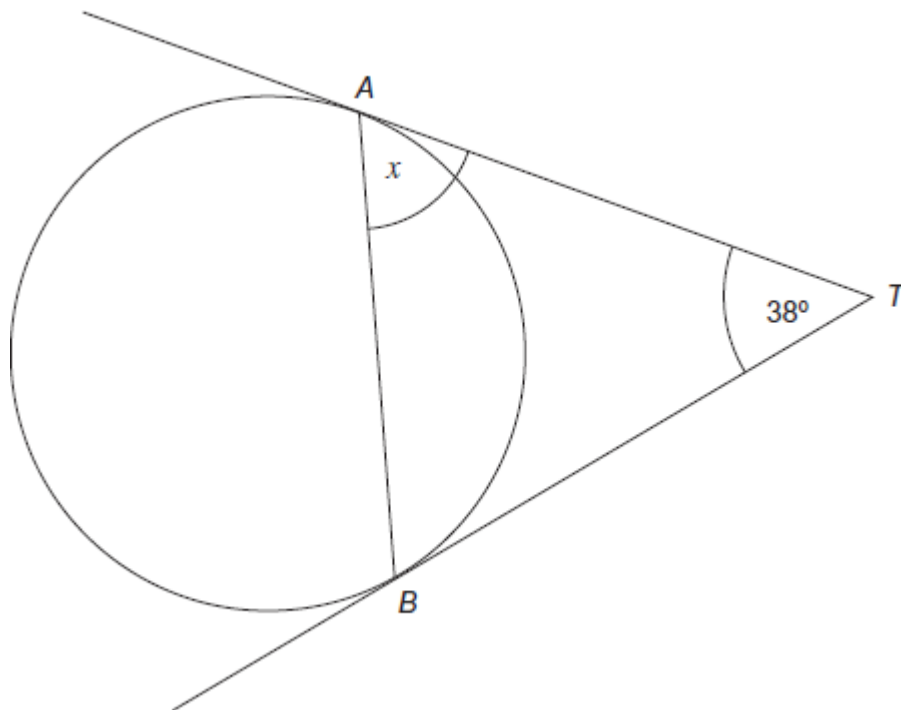
(Total 3 marks)

Q2.

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

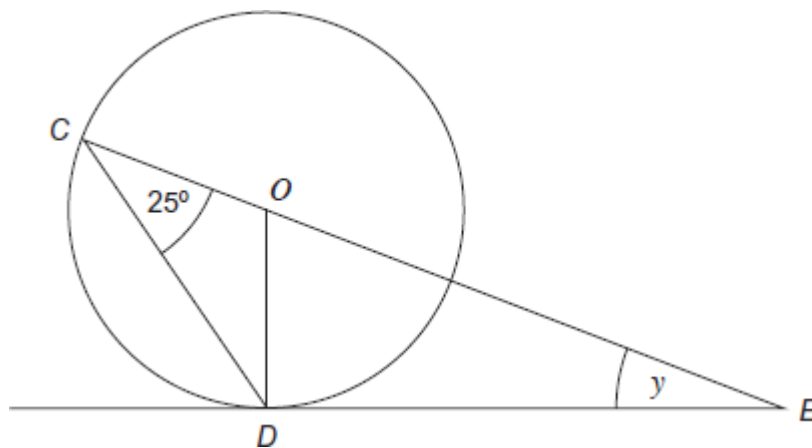Not drawn accurately

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.
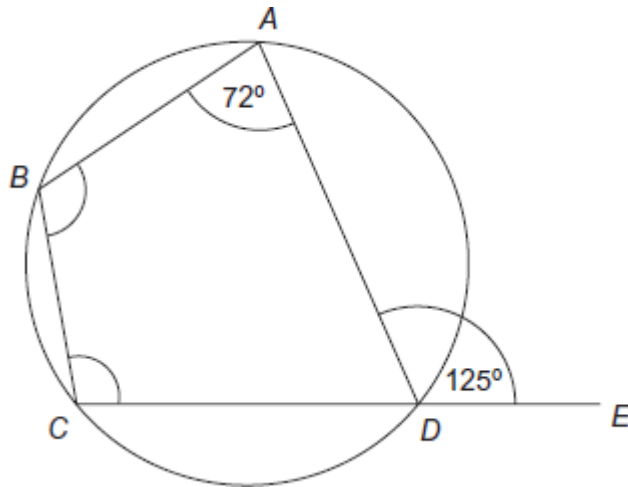
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Answer .... degrees

(3)
(Total 5 marks)

Q3.

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*.

....

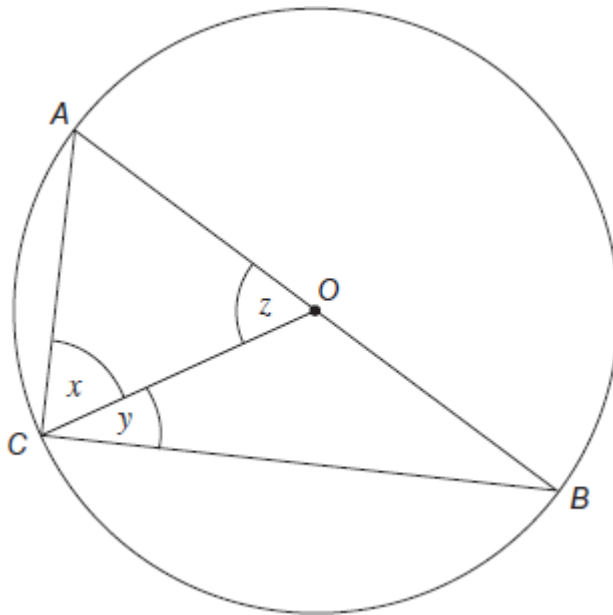Answer .... degrees

(1)
(Total 3 marks)

Q4.
(a) *A*, *B* and *C* are points on a circle, centre *O*.

Not drawn accurately

AB is a diameter.

The ratio of the size of angle x to the size of angle y is

$$x : y = 5 : 1$$

Work out the size of angle z.

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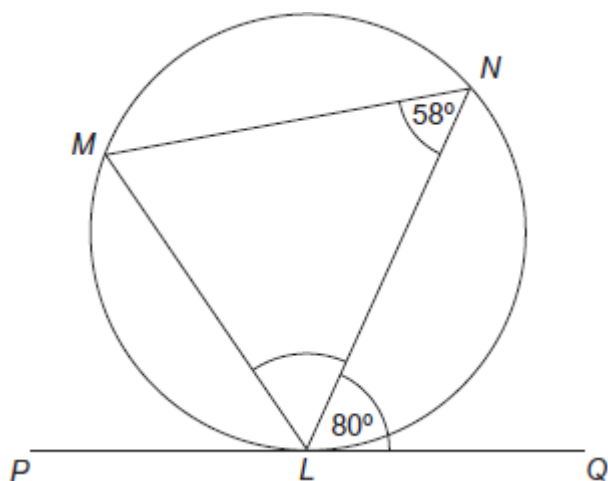Answer .... degrees

(3)

(b)   *L*, *M* and *N* are points on a circle.
       PLQ is a tangent.

Not drawn accurately

Work out angle *MLN*.

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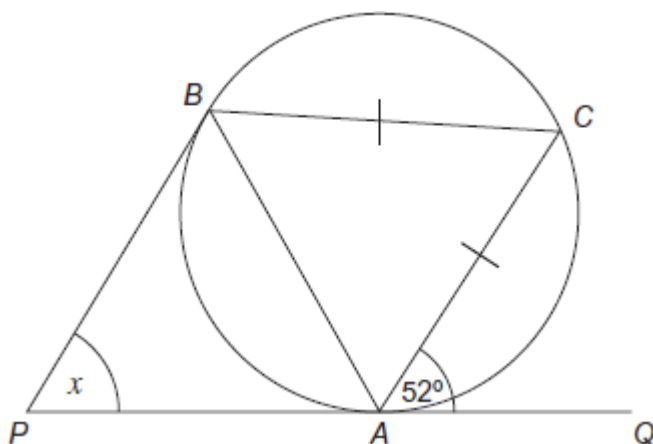Answer .... degrees

(3)
(Total 6 marks)

Q5.

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)

Q6.(a)   The diagram shows a circle, centre *O*, with diameter *AB*.

Not drawn accurately

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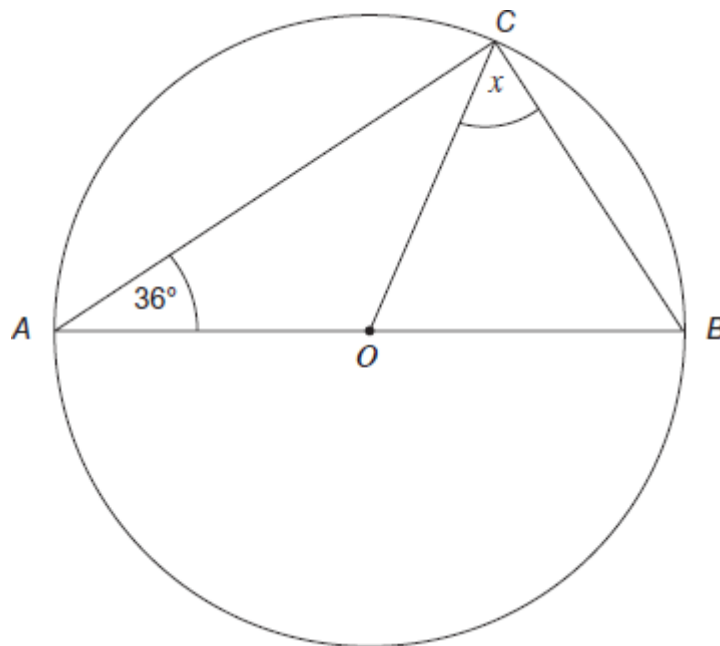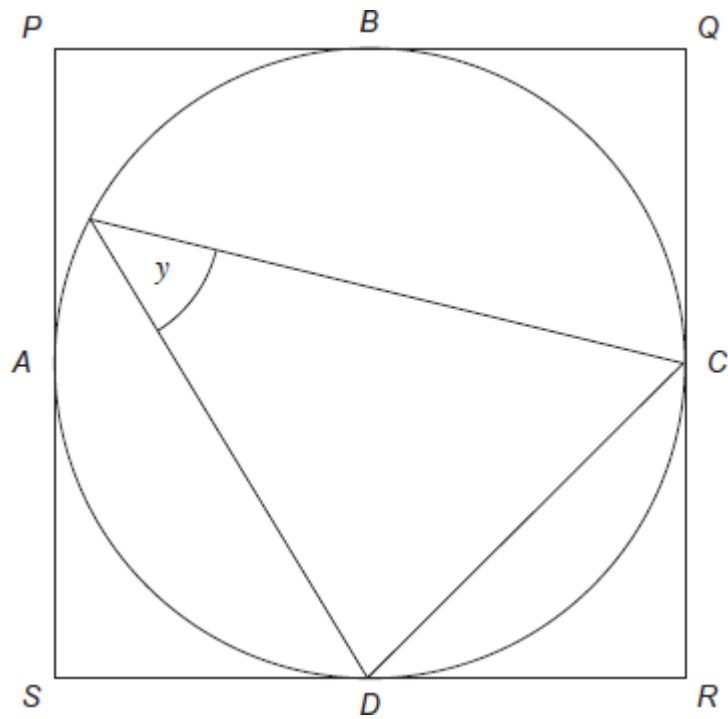
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Answer .... degrees

(2)

(b)   The diagram shows a circle touching a square at *A*, *B*, *C* and *D*.

Not drawn accurately
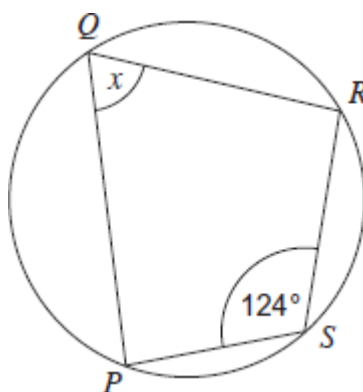

Give reasons to show why *y* = 45°

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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.

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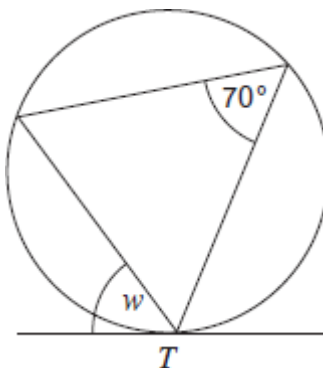Answer .... degrees

(1)

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

Not drawn accurately

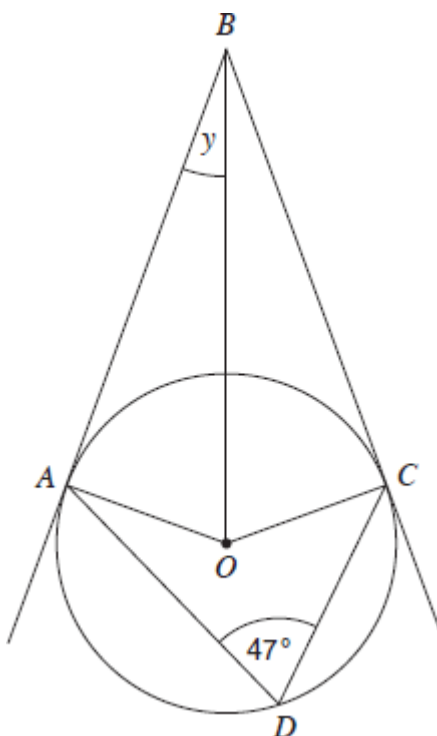Write down the size of angle w.
Give a reason for your answer.

)

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*.

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Answer .... degrees

(3)
(Total 6 marks)

Q8.

1

(a)   *O* is the centre of the circle.

Write down the size of angle a.

Not drawn accurately
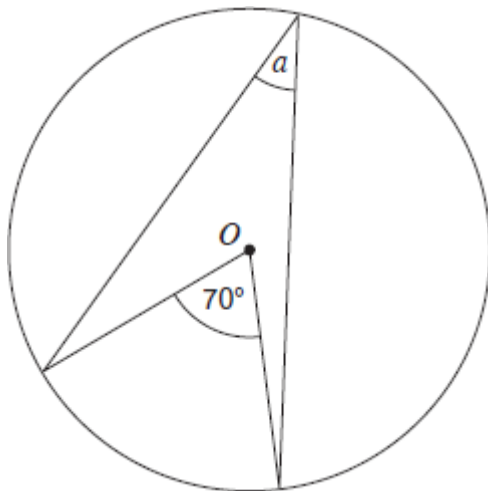
Answer .... degrees

(1)

(b)   Write down the size of angle b.
Give a reason for your answer.

Not drawn accurately
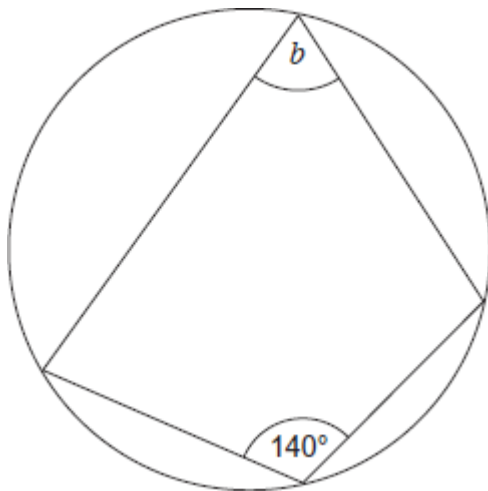
Answer .... degrees

Reason ....

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(2)

(c)   *A*, *B*, *C* and *D* are points on a circle, centre *O*.

Not drawn accurately
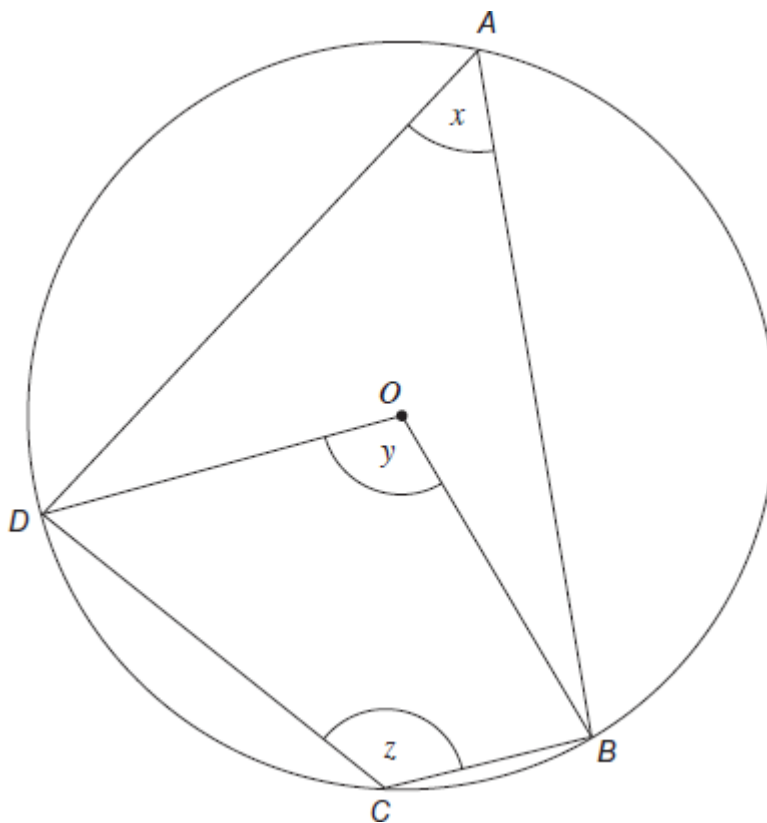
$x + y + z = 290°$

Work out the values of x, y and z.

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$x =$ .... degrees

$y =$ .... degrees

$z =$ .... degrees

(3)
(Total 6 marks)

Q9.

$ABCD$ is a cyclic quadrilateral.

Not drawn accurately

Work out the values of x and y.

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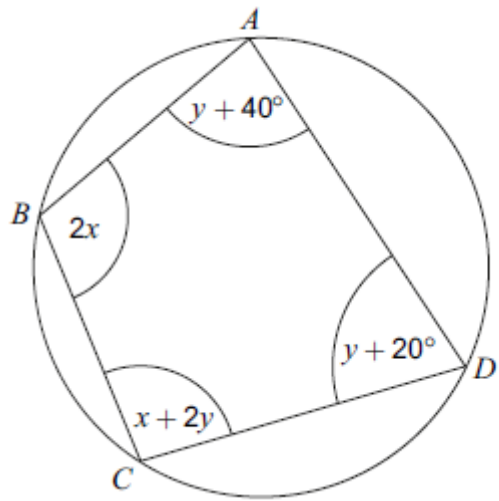
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x = ... , y = ...

(Total 5 marks)

Q10.
   R, S and T are on the circumference of a circle, centre O.

Not drawn
accurately

(a)   Give a reason why angle $OTS = x$

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(1)

(b)   Work out the value of x.

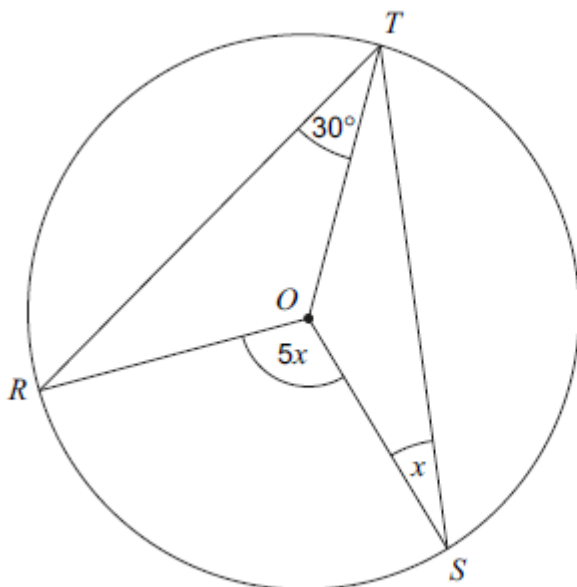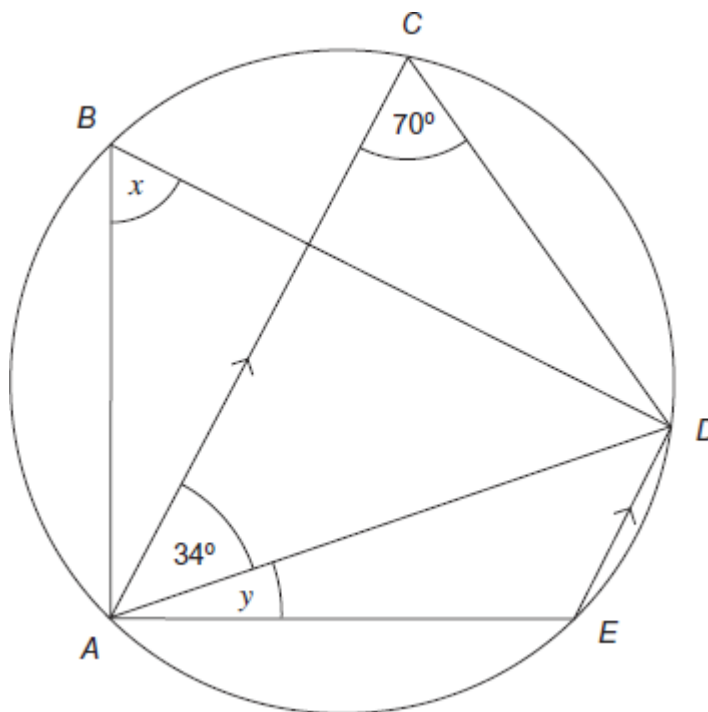   ....

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   Answer... degrees

(3)
(Total 4 marks)

Q11. *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.

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Answer .... degrees

(3)
(Total 4 marks)