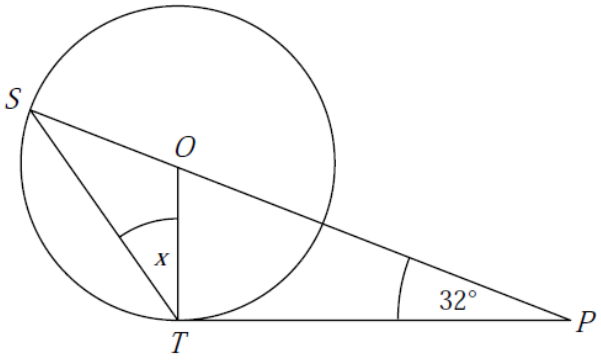
1

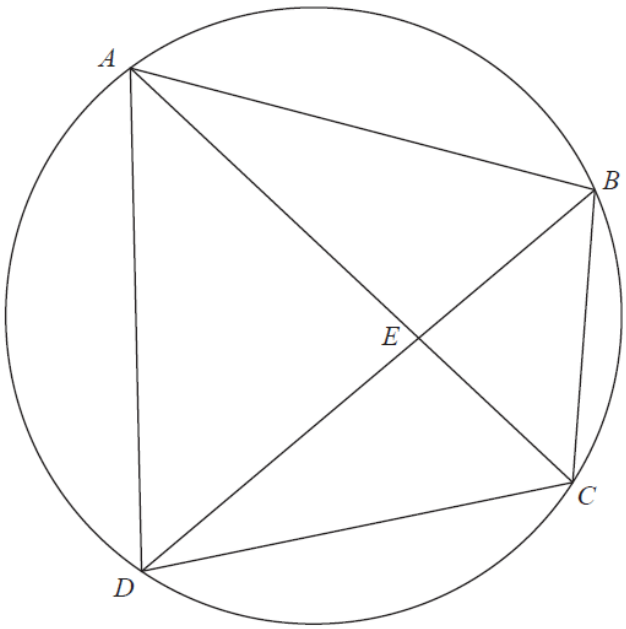


S and *T* are points on the circumference of a circle, centre *O*.
PT is a tangent to the circle.
SOP is a straight line.
Angle *OPT* = 32°

Work out the size of the angle marked *x*.
You must give a reason for each stage of your working.

(Total for Question is 4 marks)

2 A, B, C and D are four points on the circumference of a circle.

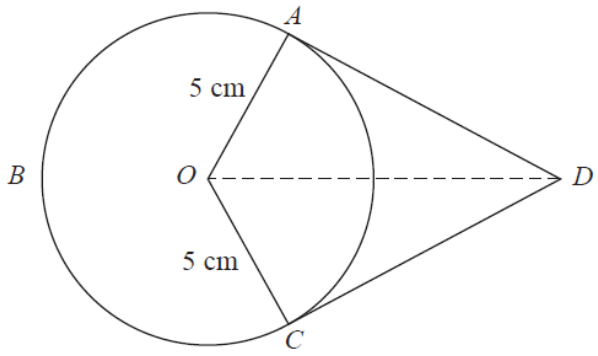


AEC and BED are straight lines.

Prove that triangle ABE and triangle DCE are similar.
You must give reasons for each stage of your working.

(Total for Question is 3 marks)

3



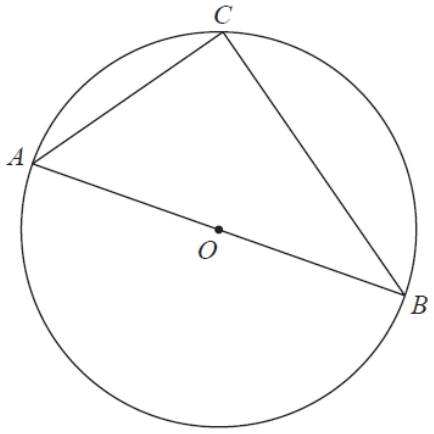
A, *B* and *C* are points on a circle of radius 5 cm, centre *O*.
DA and *DC* are tangents to the circle.
DO = 9 cm

Work out the length of arc *ABC*.
Give your answer correct to 3 significant figures.

..... cm

(Total for Question is 5 marks)

4

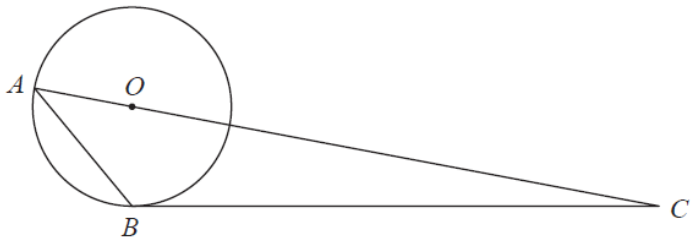


A, B and C are points on the circumference of a circle, centre O.
AOB is a diameter of the circle.

Prove that angle ACB is 90°
You must **not** use any circle theorems in your proof.

(Total for Question is 4 marks)

5



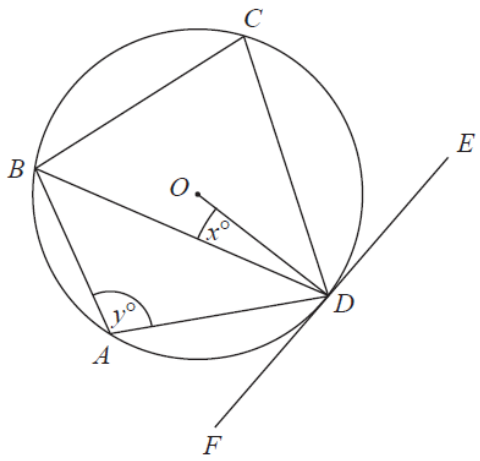
A and B are points on a circle, centre O.

BC is a tangent to the circle.
AOC is a straight line.
Angle $ABO = x°$.

Find the size of angle ACB, in terms of x.
Give your answer in its simplest form.
Give reasons for each stage of your working.

(Total for Question is 5 marks)

6



A, *B*, *C* and *D* are points on the circumference of a circle, centre *O*.
FDE is a tangent to the circle.

(a) Show that $y - x = 90$
You must give a reason for each stage of your working.

(3)

Dylan was asked to give some possible values for x and y.

He said,

"y could be 200 and x could be 110, because $200 - 110 = 90$"

(b) Is Dylan correct?
You must give a reason for your answer.

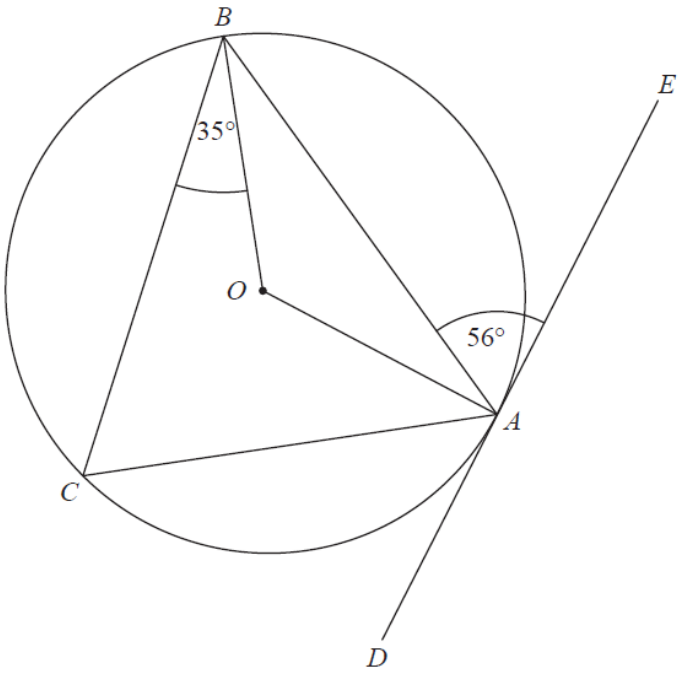
.....

.....

(1)

(Total for Question is 4 marks)

7



A, *B* and *C* are points on the circumference of a circle, centre *O*.
DAE is the tangent to the circle at *A*.

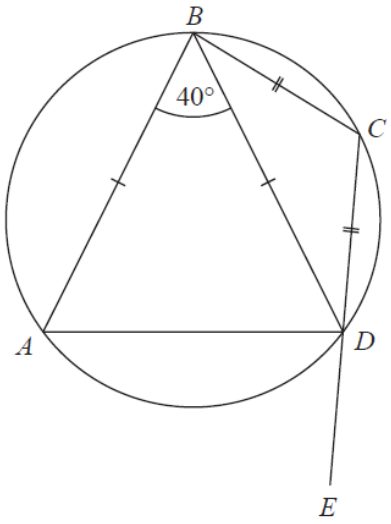
Angle *BAE* = 56°
Angle *CBO* = 35°

Work out the size of angle *CAO*.
You must show all your working.

.....°

(Total for Question is 3 marks)

8 The points A, B, C and D lie on a circle.
CDE is a straight line.

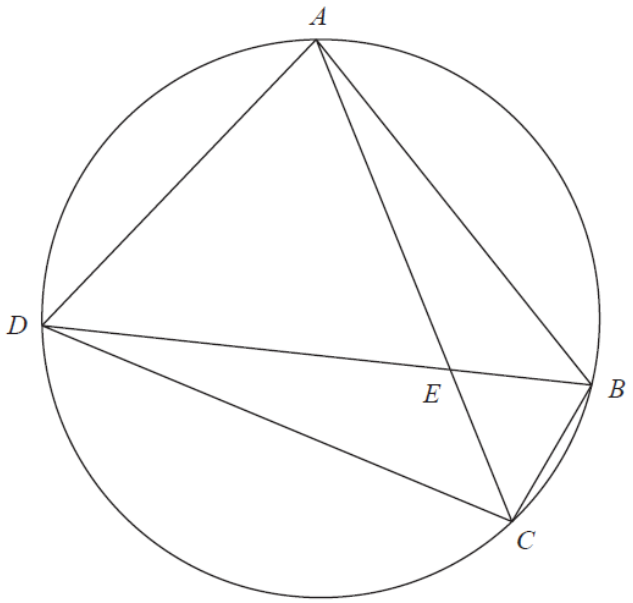


$BA = BD$
$CB = CD$
Angle $ABD = 40°$

Work out the size of angle ADE.
You must give a reason for each stage of your working.

(Total for Question is 5 marks)

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



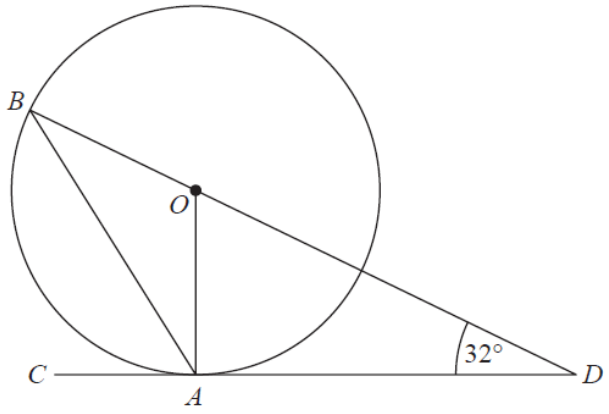
AEC and DEB are straight lines.

Triangle AED is an equilateral triangle.

Prove that triangle ABC is congruent to triangle DCB.

(Total for Question is 4 marks)

10



A and B are points on a circle with centre O.
CAD is the tangent to the circle at A.
BOD is a straight line.

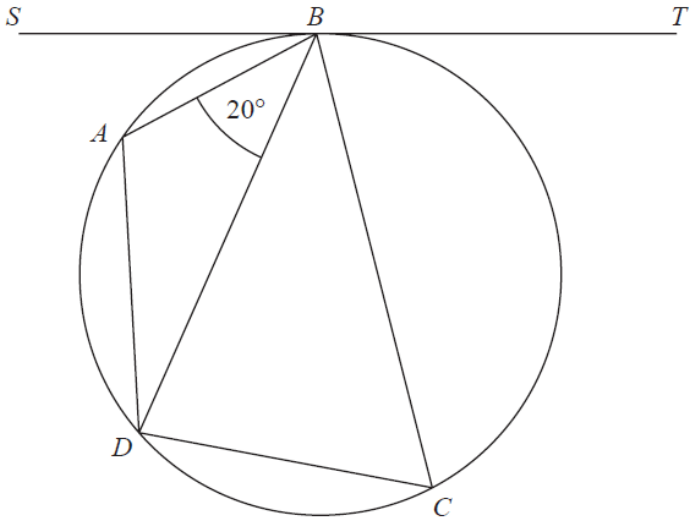
Angle $ODA = 32°$

Work out the size of angle CAB.
You must show all your working.

.....°

(Total for Question is 3 marks)

11



A, *B*, *C* and *D* are four points on a circle.
SBT is a tangent to the circle.
Angle *ABD* = 20°

the size of angle *BAD* : the size of angle *BCD* = 3 : 1

Find the size of angle *SBA*.
Give a reason for each stage of your working.

.....°

.....

(Total for Question is 4 marks)