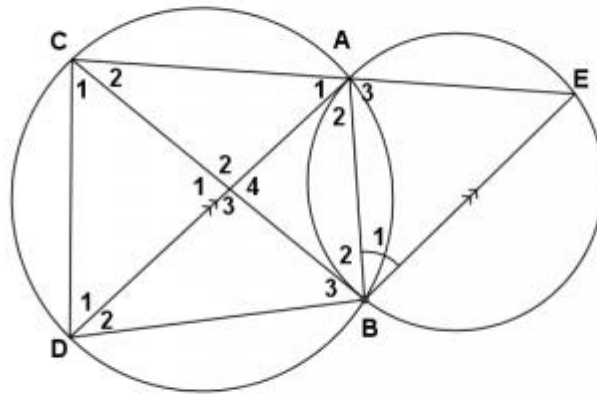


**QUESTION 5**

In the diagram below two circles intersect at A and B. BE is a tangent to the bigger circle at B and a chord of the smaller circle.  $DA \parallel BE$  and DA bisect  $\hat{C}AB$ .  $\hat{ABE} = 40^\circ$ .

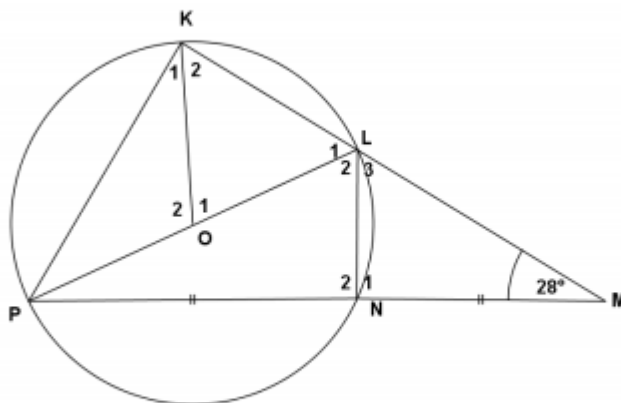


5.1 Name, with reasons, SEVEN other angles that are equal to  $\hat{ABE} = 40^\circ$ . (14)

5.2 Determine the size of angle  $\hat{A}_3$ . (2)  
**[16]**

**QUESTION 6**

In the diagram below PL is the diameter of the circle with centre O. Chord PN is produced to M such that  $PN = NM$ .  $\hat{PMK} = 28^\circ$ .



Calculate the sizes of:

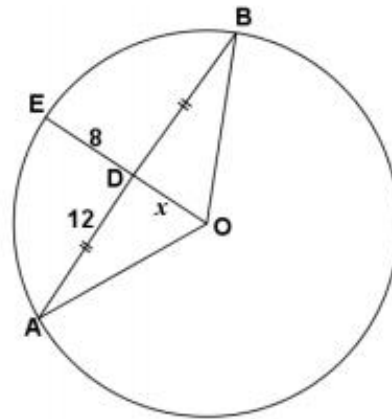
6.1  $\hat{LPN}$  (6)

6.2  $\hat{KOP}$  (5)

**[11]**

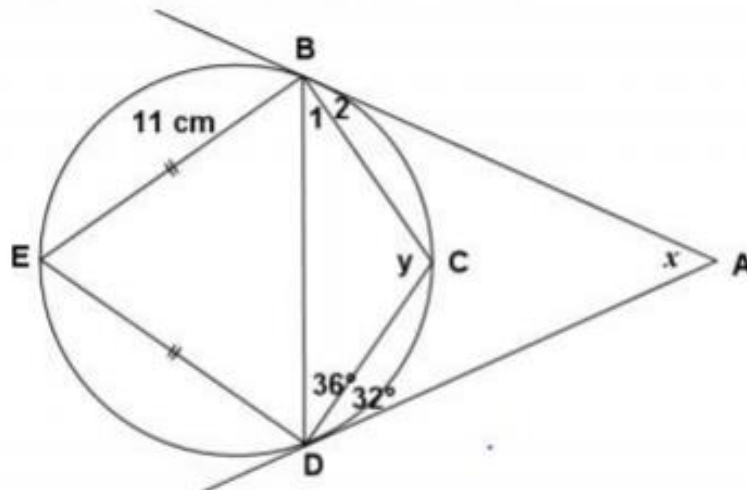
**QUESTION 7**

- 7.1 AB is a chord of a circle O. OE bisects AB.  
AD = 12, ED = 8 cm and OD = x.



- 7.1.1 Determine the radius OB in terms of  $x$ . (1)
- 7.1.2 Hence calculate the length of the radius OB. (4)

- 7.2 In the diagram below AB and AD are tangents to the circle at B and D respectively.  
EB = ED;  $\hat{BDC} = 36^\circ$ ;  $\hat{ADC} = 32^\circ$ ; BE = 11 cm.



- 7.2.1 Determine the value of  $x$ . (3)
- 7.2.2 Determine the value of  $y$ . (3)