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Province of the  
**EASTERN CAPE**  
EDUCATION

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 11**

**MATHEMATICS**

**MARCH 2020**

**BCM EDUCATION DISTRICT**

**TIME: 1 hour**

**MARKS: 50**

**INSTRUCTIONS AND INFORMATION**

1. Answer **ALL** the questions
2. Write neatly and legibly.

### QUESTION 1

1.1 Solve for  $x$  correct to two decimal places where necessary:

1.1.1  $x(x - 9) + 14 = 0$  (3)

1.1.2  $x^2 + 3x = 1$  (4)

1.1.3.  $x^2 + 3x - 18 < 0$  (4)

1.1.4.  $4^{x-6} = 32^x$  (3)

1.2. Simplify , without using a calculator:

1.2.1.  $\frac{9^{n-1} \cdot 27^{3-2n}}{81^{2-n}}$  (5)

1.2.2.  $\sqrt{20}(\sqrt{125} - \sqrt{64 + 16})$  (4)

1.3 Solve for  $x$  and  $y$  simultaneously:  
 $x + 2y = 5$  and  $2y^2 - xy - 4x^2 = 8$

(6)  
**[29]**

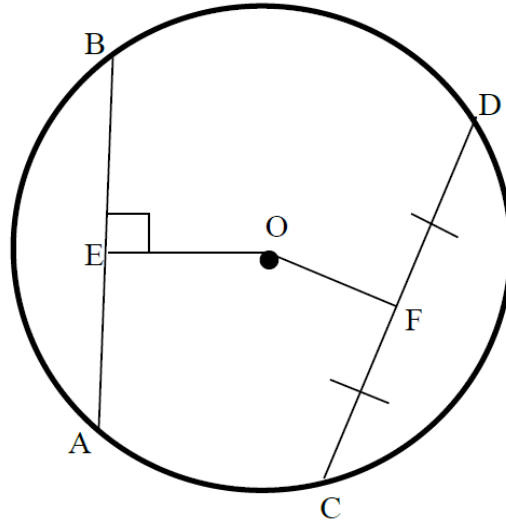
### QUESTION 2

2.1 Complete the statements below by filling in the missing word(s) to make the statements correct.

2.1.1. The line drawn from the centre of the circle perpendicular to the chord ---  
----- (1)

2.1.2. The exterior angle of a cyclic quadrilateral is equal to----- (1)

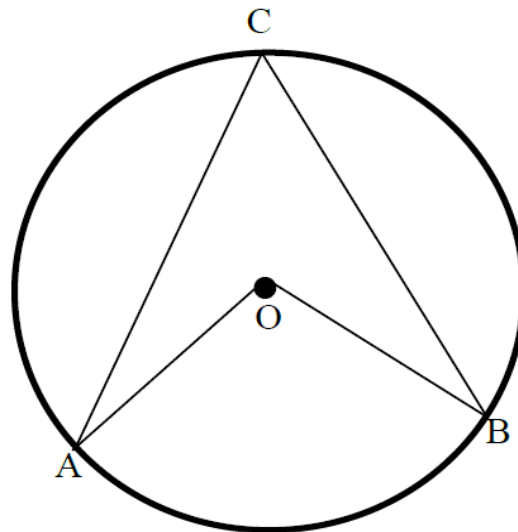
- 2.2. In the figure below, AB and CD are chords of the circle with centre O.  
 $OE \perp AB$ .  $CF = FD$ .  $OE = 4\text{cm}$ ,  $OF = 3\text{cm}$  and  $CD = 8\text{cm}$ .



- 2.2.1. Calculate the length of OD. (3)  
 2.2.2. Hence calculate the length of AB (4)  
**[9]**

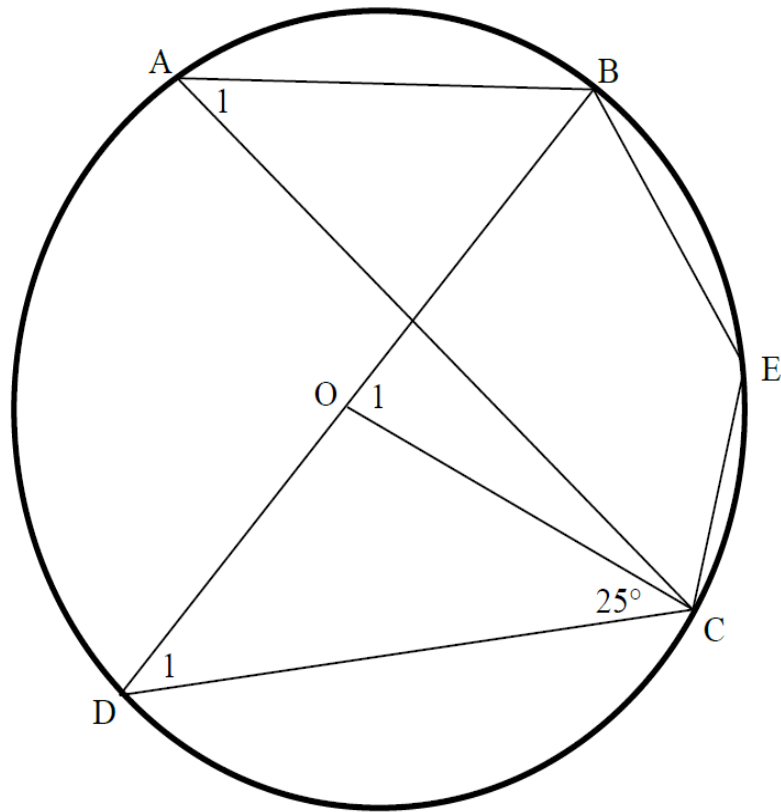
**QUESTION 3**

- 3.1 In the diagram O is the centre of the circle and A, B, C are points on the circle. Use the diagram to prove that  $\angle AOB = 2\angle ACB$



(5)

- 3.2 In the figure below  $\widehat{DCO} = 25^\circ$  and O is the centre of the circle. A, B, E, C and D are points on the circumference. Calculate giving reasons, the sizes of :



- 3.2.1.  $\widehat{D}_1$  (2)
- 3.2.2.  $\widehat{O}_1$  (1)
- 3.2.3.  $\widehat{A}_1$  (2)
- 3.2.4.  $\widehat{E}$  (2)

[12]

**TOTAL [50]**