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. $\dfrac{9^{n-1}\,.\,27^{3-2n}}{81^{2-n}}$ (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]

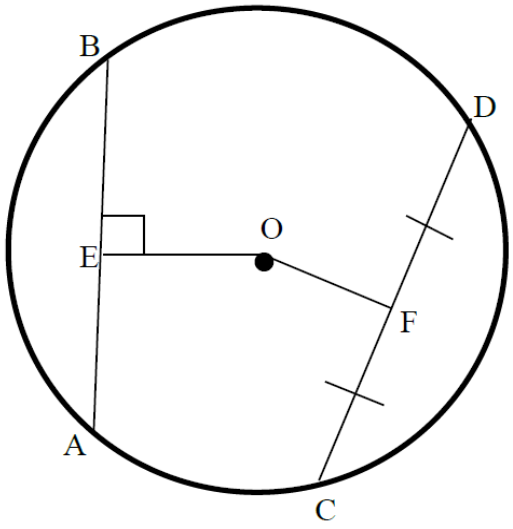
QUESTION 2

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 ⊥ AB. CF = FD. OE = 4*cm*, OF = 3cm and CD = 8*cm*.



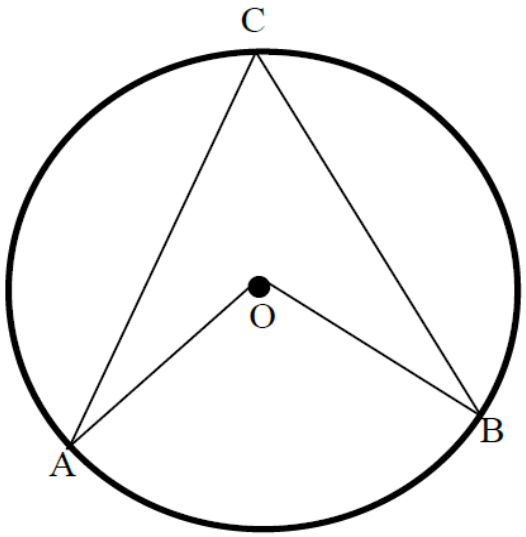
2.2.1. Calculate the length of OD. (3)

2.2.2. Hence calculate the length of AB (4)

[9]

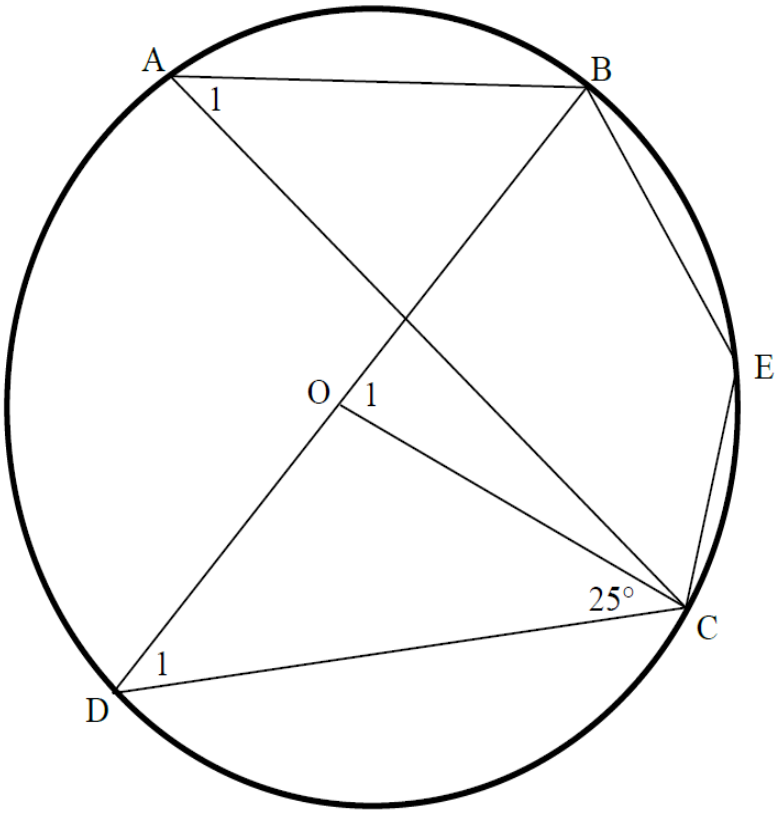
QUESTION 3

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 :$A\hat{O}B = 2\,A\hat{C}B$



(5)

3.2 In the figure below $D\hat{C}O = 25°$ 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. $\hat{D}_1$ (2)

3.2.2 $\hat{O}_1$ (1)

3.2.3. $\hat{A}_1$ (2)

3.2.4. $\hat{E}$ (2)

[12]

TOTAL [50]