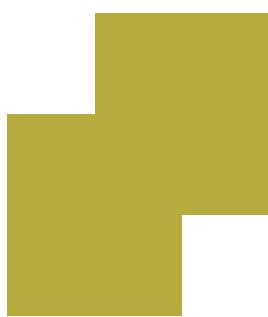


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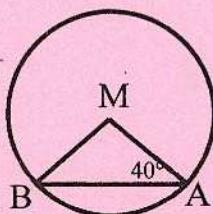
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Question ( 1 ) : Choose the correct answer from those given:

- 1) A tangent to a circle of radius length is 6 cm, then it is distant from its center by ..... cm. [ 2 , 3 , 6 , 12 ]



- 2) In the opposite figure :

$$m(\angle AMB) = \dots \dots$$

[  $100^\circ$  ,  $90^\circ$  ,  $80^\circ$  ,  $40^\circ$  ]

- 3) The number of symmetric axes of a circle is ..... [ zero , 2 , 6 , an infinite ]
- 4) A circle can not be drawn passing the vertices of a ..... [ triangle , square , parallelogram , rectangle ]

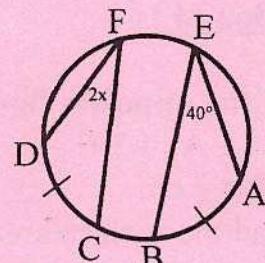
- 5) In the opposite figure :

If the length of  $\widehat{AB} =$  the length of  $\widehat{CD}$

$$m(\angle AEB) = 40^\circ , m(\angle CFD) = 2x ,$$

$$\text{then } x = \dots \dots$$

[  $20^\circ$  ,  $30^\circ$  ,  $40^\circ$  ,  $80^\circ$  ]



- 6) If the measure of the angle of tangency is equal  $70^\circ$ , then the measure of the central angle subtended by the same arc = ..... [  $35^\circ$  ,  $70^\circ$  ,  $140^\circ$  ,  $210^\circ$  ]

Question ( 2 ) :

- a) In the opposite figure:

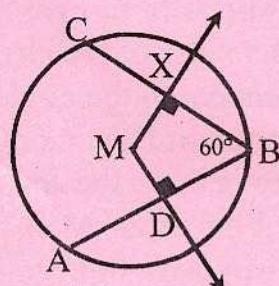
$\overline{AB}$  ,  $\overline{BC}$  are two chords in the circle M.

$\overrightarrow{MD} \perp \overline{AB}$ , and  $\overrightarrow{MX} \perp \overline{BC}$ ,

$$MX = MD , m(\angle ABC) = 60^\circ$$

First : Find :  $m(\angle DMX)$

Second : Prove that :  $AB = BC$ .



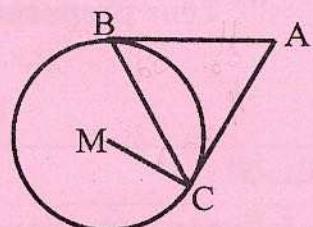
(( بقية الأسئلة في الصفحة الثانية ))

**b) In the opposite figure:**

$\overline{AB}$ ,  $\overline{AC}$  are two tangent – segments

to the circle M at B, C and  $m(\angle BCM) = 30^\circ$

Prove that: ABC is an equilateral triangle

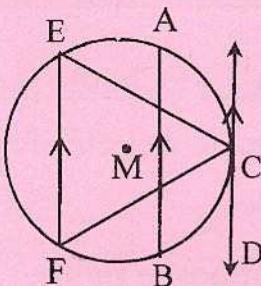
**Question (3) :****a) In the opposite figure:**

In a circle M,

$\overleftrightarrow{CD}$  is a tangent to the circle at C,

$\overline{AB}$ ,  $\overline{EF}$  are two chords in the circle

Where  $\overline{AB} \parallel \overline{EF} \parallel \overleftrightarrow{CD}$ .



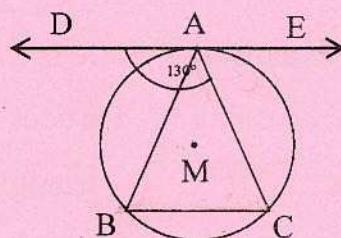
Prove that:  $CE = CF$

**b) In the opposite figure:**

$\overleftrightarrow{ED}$  is a tangent to the circle M

touches it at A,  $m(\angle DAC) = 130^\circ$

Find with proof  $m(\angle B)$

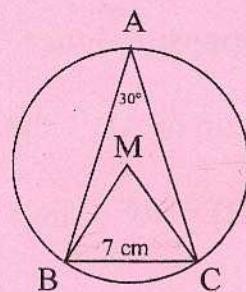
**Question (4) :****a) In the opposite figure:**

$m(\angle A) = 30^\circ$ ,

$BC = 7 \text{ cm}$

Find the surface area of

the circle M, ( $\pi \approx \frac{22}{7}$ )

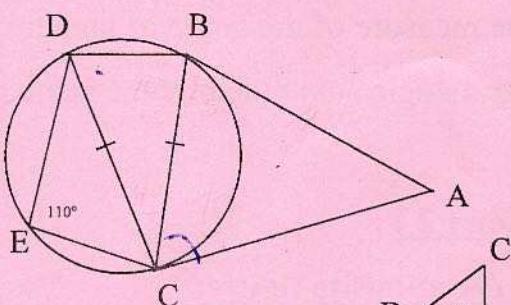
**b) In the opposite figure:**

$\overline{AB}$ ,  $\overline{AC}$  are two tangents segments,

$m(\angle DEC) = 110^\circ$ ,  $BC = CD$ ,

First: prove that :  $m(\angle ABC) = m(\angle DBC)$

Second: Find  $m(\angle A)$

**Question (5) :****a) In the opposite figure:**

$\overline{AB}$  is a diameter of the circle M ,

$\overline{AC}$  is a tangent to the circle at A , E

is a midpoint of BD ,  $m(\angle C) = 50^\circ$

First: Prove that : the shape AMEC is a cyclic quadrilateral.

Second: Find  $m(\angle AME)$

**b) In the opposite figure:**

Find the measure of the arc which represent the measure of  $\frac{3}{4}$  of the circle and if the radius of this circle equals 21 cm, find the length of this arc. ( $\pi \approx \frac{22}{7}$ )

