

## General Exercises on Geometry

### **FIRST** Completion questions

#### ① Complete the following :

- (1) The central angle is an angle , the vertex of it is .....  
and its sides contain .....
- (2) The inscribed angle is an angle , the vertex of it lies .....  
and its sides contain .....
- (3) In the same circle (or in congruent circles) , if the measures of arcs are equal , then their chords are .....
- (4) The two parallel chords of a circle intercept between them the two arcs .....
- (5) In a circle , the two intercepted arcs by a tangent to the circle and a chord parallel to it are .....
- (6) If the measure of the inscribed angle is  $x^\circ$  , then the measure of the central angle subtended by the same arc is .....
- (7) The measure of the inscribed angle equals ..... the measure of the arc subtended by it.
- (8) The inscribed angle in a semicircle is .....
- (9) In a circle , the inscribed angles subtended by the same arc are .....
- (10) In a cyclic quadrilateral , each two opposite angles are .....
- (11) The measure of the exterior angle at a vertex of a cyclic quadrilateral is equal to .....
- (12) The two tangents drawn from the end points of a diameter of a circle are .....
- (13) The two tangent-segments drawn to a circle from a point outside it , are .....
- (14) The measure of the angle of tangency is ..... the measure of the inscribed angle subtended by the same arc
- (15) The measure of the angle of tangency is ..... the measure of the central angle subtended by the same arc.
- (16) The measure of the arc which subtends an inscribed angle of measure  $25^\circ$  is .....
- (17) The measure of the arc which represents  $\frac{2}{3}$  of the measure of the circle is .....
- (18) The inscribed angle of measure  $60^\circ$  subtends an arc whose length represents ..... the circumference of the circle.

(19) The length of the arc which subtends the central angle of measure  $90^\circ$  is .....

(20) In a circle, if the length of the arc which subtends an inscribed angle of measure  $30^\circ$  is 5 cm., then the circumference of the circle .....

(21) If  $\overline{AB}$  is a chord in a circle M and  $m(\angle AMB) = 30^\circ$ ,  
then  $m(\widehat{AB} \text{ the major}) = \dots\dots\dots$

(22) If ABCD is a cyclic quadrilateral in which  $m(\angle B) = 85^\circ$ ,  
then  $m(\angle D) = \dots\dots\dots^\circ$

(23) If ABCD is a cyclic quadrilateral, then  $m(\angle ACB) = m(\angle \dots\dots\dots)$

(24) If ABCD is a cyclic quadrilateral in which  $m(\angle A) = 2m(\angle C) = 3m(\angle D)$ ,  
then  $m(\angle A) = \dots\dots\dots^\circ$  and  $m(\angle B) = \dots\dots\dots^\circ$

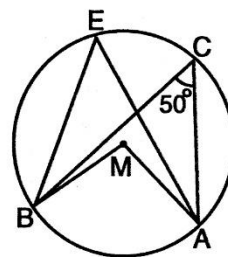
(25) The number of common tangents to the two touching externally circles is .....

(26) The number of common tangents to the two intersecting circles is .....

(27) If ABCD is a square inscribed in a circle, then  $m(\widehat{AB}) = \dots\dots\dots^\circ$

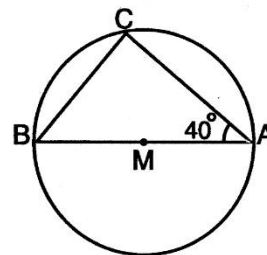
(28) In the opposite figure :

If  $m(\angle C) = 50^\circ$ ,  
then  $m(\angle E) = \dots\dots\dots^\circ$   
and  $m(\angle AMB) = \dots\dots\dots^\circ$



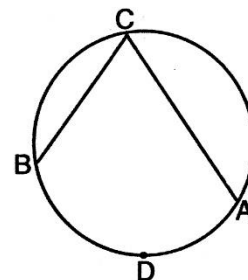
(29) In the opposite figure :

If  $m(\angle BAC) = 40^\circ$ ,  
then  $m(\angle B) = \dots\dots\dots^\circ$



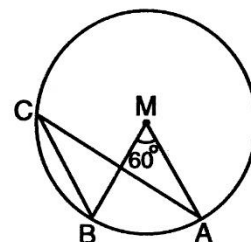
(30) In the opposite figure :

If  $m(\widehat{ADB}) = 140^\circ$ ,  
then  $m(\angle C) = \dots\dots\dots^\circ$



(31) In the opposite figure :

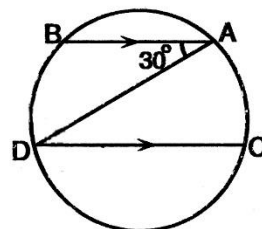
M is a circle, where  
 $m(\angle AMB) = 60^\circ$   
then  $m(\angle ACB) = \dots\dots\dots^\circ$



(32) In the opposite figure :

If  $\overline{AB} \parallel \overline{CD}$  and  $m(\angle A) = 30^\circ$

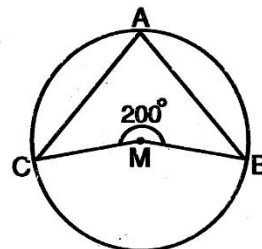
, then  $m(\widehat{AC}) = \dots\dots\dots^\circ$



(33) In the opposite figure :

If  $m(\angle BMC)$  the reflex  $= 200^\circ$

, then  $m(\angle A) = \dots\dots\dots^\circ$

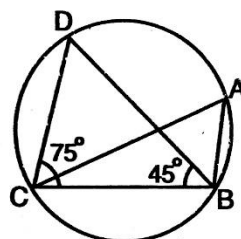


(34) In the opposite figure :

If  $m(\angle BCD) = 75^\circ$

and  $m(\angle DBC) = 45^\circ$

, then  $m(\angle A) = \dots\dots\dots^\circ$

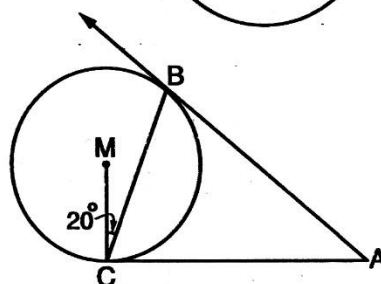


(35) In the opposite figure :

$\overline{AB}$  and  $\overline{AC}$  touch the circle M

If  $m(\angle BCM) = 20^\circ$

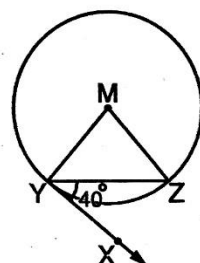
, then  $m(\angle A) = \dots\dots\dots^\circ$



(36) In the opposite figure :

If  $\overline{YX}$  is a tangent to the circle M

, then  $m(\angle YMZ) = \dots\dots\dots^\circ$

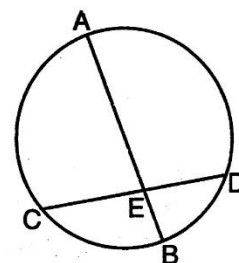


(37) In the opposite figure :

If  $m(\widehat{AC}) = 110^\circ$

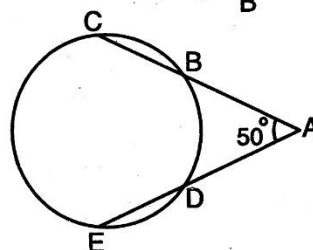
and  $m(\widehat{BD}) = 50^\circ$

, then  $m(\angle AEC) = \dots\dots\dots^\circ$



(38) In the opposite figure :

$\frac{1}{4} [m(\widehat{CE}) - m(\widehat{BD})] = \dots\dots\dots^\circ$

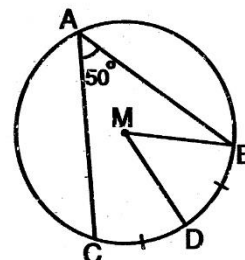


(39) In the opposite figure :

If  $m(\widehat{BD}) = m(\widehat{DC})$

and  $m(\angle BAC) = 50^\circ$

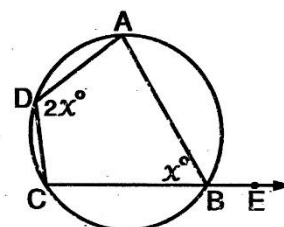
, then  $m(\angle BMD) = \dots\dots\dots^\circ$



(40) In the opposite figure :

If ABCD is a cyclic quadrilateral

, then  $m(\angle ABE) = \dots\dots\dots^\circ$

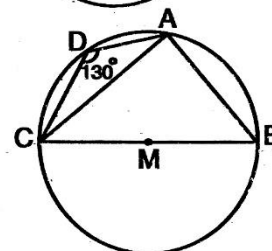


(41) In the opposite figure :

If  $\overline{BC}$  is a diameter in the circle M

and  $m(\angle D) = 130^\circ$

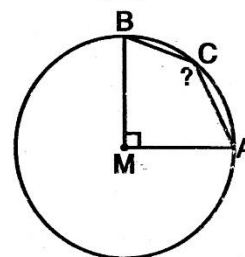
, then  $m(\angle ACB) = \dots\dots\dots^\circ$



(42) In the opposite figure :

If  $\overline{MA} \perp \overline{MB}$

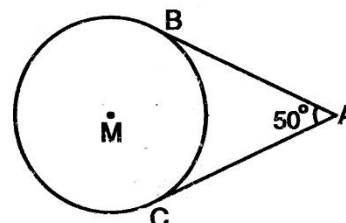
, then  $m(\angle ACB) = \dots\dots\dots^\circ$



(43) In the opposite figure :

$\overline{AB}$  and  $\overline{AC}$  are two tangent-segments to the circle M and  $m(\angle BAC) = 50^\circ$

, then  $m(\widehat{BC}) = \dots\dots\dots^\circ$



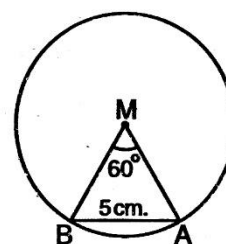
(44) In the opposite figure :

If  $AB = 5$  cm.

and  $m(\angle AMB) = 60^\circ$

, then the length

of the radius =  $\dots\dots\dots$  cm.

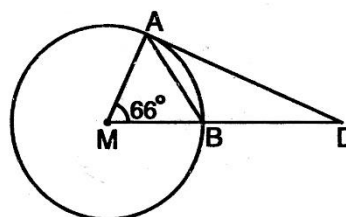


(45) In the opposite figure :

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

and  $m(\angle AMB) = 66^\circ$

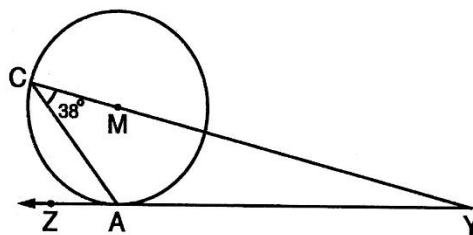
, then  $m(\angle DAB) = \dots\dots\dots^\circ$



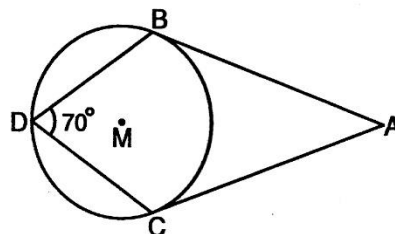


**(46) In the opposite figure :**

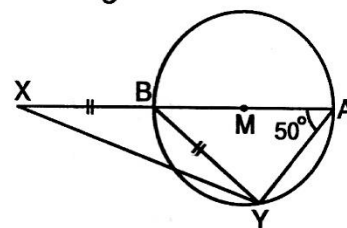
If  $\overrightarrow{YZ}$  is a tangent to the circle M  
at A and  $m(\angle C) = 38^\circ$   
then  $m(\angle Y) = \dots\dots\dots^\circ$

**(47) In the opposite figure :**

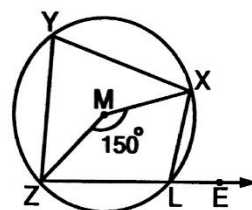
If  $\overline{AB}$  and  $\overline{AC}$  are two tangent-segments  
and  $m(\angle D) = 70^\circ$   
then  $m(\angle A) = \dots\dots\dots^\circ$

**(48) In the opposite figure :**

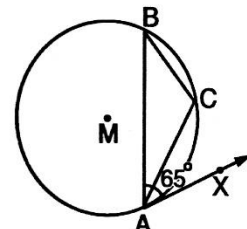
If  $\overline{AB}$  is a diameter of the circle M and  $X \in \overrightarrow{AB}$   
such that :  $BY = BX$   
and  $m(\angle A) = 50^\circ$ , then  $m(\angle X) = \dots\dots\dots^\circ$

**(49) In the opposite figure :**

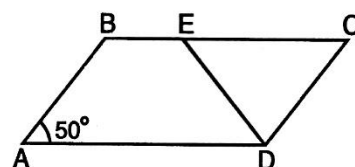
If  $E \in \overrightarrow{ZL}$  and  $m(\angle XMZ) = 150^\circ$   
then  $m(\angle XLE) = \dots\dots\dots^\circ$

**(50) In the opposite figure :**

If  $m(\angle XAB) = 65^\circ$   
then  $m(\angle ACB) = \dots\dots\dots^\circ$

**(51) In the opposite figure :**

ABCD is a parallelogram and  $m(\angle A) = 50^\circ$   
and  $E \in \overline{BC}$  where the figure ABED  
is a cyclic quadrilateral  
then  $m(\angle CDE) = \dots\dots\dots^\circ$

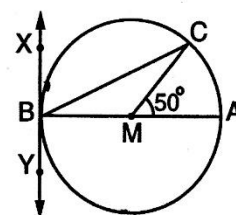
**(2) In the opposite figure :**

$\overline{AB}$  is a diameter of the circle M,  $\overrightarrow{XY}$  is a tangent at B  
and  $m(\angle AMC) = 50^\circ$ , then complete the following :

(1)  $m(\angle ABC) = \dots\dots\dots^\circ$

(2)  $m(\widehat{BC}) = \dots\dots\dots^\circ$

(3)  $m(\angle CBX) = \dots\dots\dots^\circ$



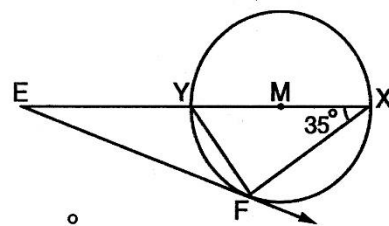
**③ In the opposite figure :**

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

$\overleftrightarrow{EF}$  is a tangent to the circle at F ,

$\overline{XY} \cap \overline{FE} = \{E\}$  and  $m(\angle X) = 35^\circ$  , then :

- (1)  $m(\angle XFY) = \dots\dots\dots^\circ$       (2)  $m(\angle XMF) = \dots\dots\dots^\circ$   
 (3)  $m(\angle YFE) = \dots\dots\dots^\circ$       (4)  $m(\angle E) = \dots\dots\dots^\circ$

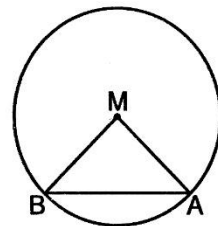
**④ In the opposite figure :**

A circle M in which the area of  $\triangle AMB$

which right-angled at M =  $8 \text{ cm}^2$

Complete the following :

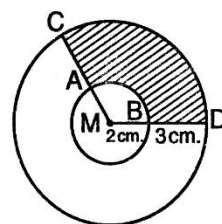
- (1) The area of the circle =  $\dots\dots\dots \text{ cm}^2$   
 (2) The length of  $\widehat{AB} = \dots\dots\dots \text{ cm}$ .      ( $\pi = 3.14$ )

**⑤ In the opposite figure :**

Two circles are concentric at M. If  $m(\widehat{CD}) = 120^\circ$

,  $MB = 2 \text{ cm}$ . and  $BD = 3 \text{ cm}$ . , then complete :

- (1)  $m(\widehat{AB}) = \dots\dots\dots^\circ$   
 (2) The area of the shaded region =  $\dots\dots\dots \text{ cm}^2$  ( $\pi = \frac{22}{7}$ )

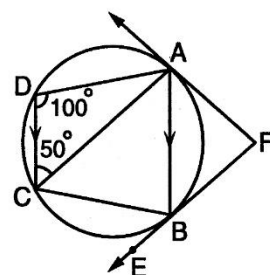
**⑥ In the opposite figure :**

If  $\overleftrightarrow{FA}$  and  $\overleftrightarrow{FB}$  are two tangents to a circle at A and B ,

$\overline{AB} \parallel \overline{CD}$  ,  $BF = 3 \text{ cm}$ . ,  $m(\angle ADC) = 100^\circ$

and  $m(\angle ACD) = 50^\circ$  , then :

- (1)  $AF = \dots\dots\dots \text{ cm}$ .      (2)  $m(\angle ABC) = \dots\dots\dots^\circ$   
 (3)  $m(\angle CBE) = \dots\dots\dots^\circ$       (4)  $m(\angle AFB) = \dots\dots\dots^\circ$

**SECOND Multiple choice questions****① Choose the correct answer from the given ones :**

(1) The measure of a semicircle =  $\dots\dots\dots$

- [a]  $\pi r$       [b]  $180^\circ$       [c]  $\frac{1}{2} \pi r$       [d]  $90^\circ$

(2) The measure of the arc which represents  $\frac{2}{5}$  of the measure of the circle =  $\dots\dots\dots$

- [a]  $36^\circ$       [b]  $72^\circ$       [c]  $144^\circ$       [d]  $288^\circ$

- (3) The length of the arc subtended by an inscribed angle of measure  $90^\circ$  in a circle whose circumference is 40 cm. equals ..... cm.  
 [a] 20                      [b] 10                      [c] 30                      [d] 40
- (4) The length of the arc subtended by a central angle of measure  $30^\circ$  in a circle whose circumference is 24 cm. equals ..... cm.  
 [a] 2                      [b] 4                      [c] 1                      [d] 8
- (5) The arc length of a quarter of a circle equals ..... length units.  
 [a]  $2\pi r$                       [b]  $\pi r$                       [c]  $\frac{1}{2}\pi r$                       [d]  $\frac{1}{4}\pi r$
- (6) If  $\widehat{AB} \subset$  the circle M and  $\frac{\text{the length of } \widehat{AB}}{\text{the circumference of the circle}} = \frac{2}{3}$ ,  
 then  $m(\angle AMB) = \dots\dots\dots$   
 [a]  $120^\circ$                       [b]  $240^\circ$                       [c]  $60^\circ$                       [d]  $30^\circ$
- (7) The central angle whose measure is  $120^\circ$  is subtended by an arc whose length = ..... the circumference of the circle.  
 [a]  $\frac{1}{6}$                       [b]  $\frac{1}{4}$                       [c]  $\frac{1}{3}$                       [d]  $\frac{1}{2}$
- (8) The measure of the central angle is ..... the measure of the angle of tangency subtended by the same arc.  
 [a] half                      [b] equal to                      [c] twice                      [d] third
- (9) The ratio between the measure of the inscribed angle and the measure of the central angle subtended by the same arc is .....  
 [a] 1 : 2                      [b] 2 : 1                      [c] 1 : 1                      [d] 1 : 3
- (10) The measure of the intercepted angle between a tangent and a chord is equal to .....  
 [a] the measure of the subtended arc by it.  
 [b] twice the measure of the subtended arc by it.  
 [c] half the measure of the subtended arc by it.  
 [d]  $360^\circ$
- (11) In a circle, the inscribed angle subtended by a major arc is ..... angle.  
 [a] an acute                      [b] a right                      [c] a reflex                      [d] an obtuse
- (12) In a cyclic quadrilateral, each two angles which are drawn on one base and on the same side of it are .....  
 [a] equal in measure.                      [b] complementary.  
 [c] supplementary.                      [d] alternate.



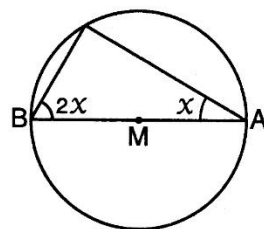
- (13) If ABCD is a cyclic quadrilateral in which  $m(\angle A) = 50^\circ$ ,  
then  $m(\angle C) = \dots\dots\dots$   
[a]  $50^\circ$                       [b]  $130^\circ$                       [c]  $90^\circ$                       [d]  $180^\circ$
- (14) If ABCD is a cyclic quadrilateral and  $m(\angle B) = \frac{1}{2} m(\angle D)$ ,  
then  $m(\angle B) = \dots\dots\dots$   
[a]  $30^\circ$                       [b]  $120^\circ$                       [c]  $60^\circ$                       [d]  $90^\circ$
- (15) If ABCD is a cyclic quadrilateral and  $m(\angle A) + m(\angle C) = 4 m(\angle B)$ ,  
then  $m(\angle D) = \dots\dots\dots$   
[a]  $90^\circ$                       [b]  $45^\circ$                       [c]  $60^\circ$                       [d]  $135^\circ$
- (16) If ABCD is a cyclic quadrilateral and  $\overline{AD} \parallel \overline{BC}$ , then .....  
[a]  $AB > DC$               [b]  $AB < DC$               [c]  $AB = DC$               [d]  $\overline{AB} \parallel \overline{DC}$
- (17) It is possible to draw a circle passing through the vertices of a .....  
[a] rhombus.                      [b] rectangle.  
[c] parallelogram.              [d] right-angled trapezium.
- (18) The centre of the inscribed circle of any triangle is the point of intersection  
of .....  
[a] its medians.                      [b] the bisectors of its interior angles.  
[c] its altitudes.  
[d] the perpendicular straight lines drawn from the midpoints of its sides.
- (19) The centre of the circumcircle of a triangle is the point of intersection  
of .....  
[a] its medians.                      [b] the bisectors of its interior angles.  
[c] its altitudes.  
[d] the perpendicular straight lines drawn from the midpoints of its sides.
- (20) In the equilateral triangle, the radius length of the inscribed circle is .....  
the radius length of the circumcircle.  
[a] equal to                      [b] twice                      [c] half                      [d] third
- (21) The number of the common tangents to two distant circles is .....  
[a] 1                      [b] 2                      [c] 3                      [d] 4
- (22) The number of the common tangents to two touching internally circles is .....  
[a] 1                      [b] 2                      [c] 3                      [d] 4
- (23) From any point on the circle, we can draw .....  
[a] only one tangent.                      [b] two tangents.  
[c] three tangents.                      [d] an infinite number of tangents.



**(24) In the opposite figure :**

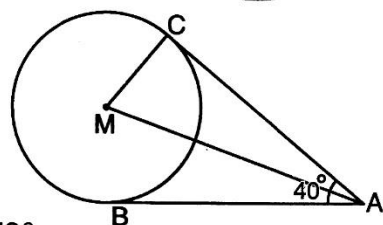
If  $\overline{AB}$  is a diameter in the circle M  
 , then  $x = \dots\dots\dots$

- [a]  $40^\circ$                       [b]  $20^\circ$                       [c]  $30^\circ$                       [d]  $60^\circ$

**(25) In the opposite figure :**

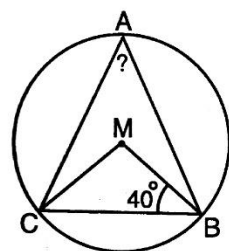
If  $\overline{AB}$  and  $\overline{AC}$  are two tangent-segments  
 to the circle M and  $m(\angle CAB) = 40^\circ$  ,  
 then  $m(\angle CMA) = \dots\dots\dots$

- [a]  $40^\circ$                       [b]  $80^\circ$                       [c]  $20^\circ$                       [d]  $70^\circ$

**(26) In the opposite figure :**

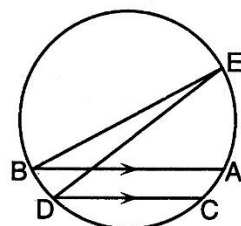
If  $m(\angle MBC) = 40^\circ$   
 , then  $m(\angle BAC) = \dots\dots\dots$

- [a]  $70^\circ$                       [b]  $40^\circ$                       [c]  $100^\circ$                       [d]  $50^\circ$

**(27) In the opposite figure :**

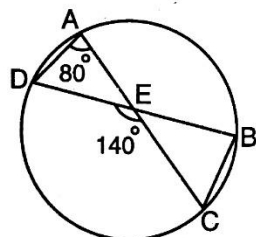
If  $\overline{AB}$  and  $\overline{CD}$  are two parallel  
 chords in the circle M and  $m(\widehat{AC}) = 28^\circ$   
 , then  $m(\angle BED) = \dots\dots\dots$

- [a]  $28^\circ$                       [b]  $14^\circ$                       [c]  $56^\circ$                       [d]  $7^\circ$

**(28) In the opposite figure :**

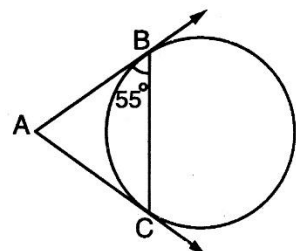
$m(\angle CED) = 140^\circ$  and  $m(\angle A) = 80^\circ$   
 , then  $m(\angle C) = \dots\dots\dots$

- [a]  $30^\circ$                       [b]  $40^\circ$                       [c]  $50^\circ$                       [d]  $60^\circ$

**(29) In the opposite figure :**

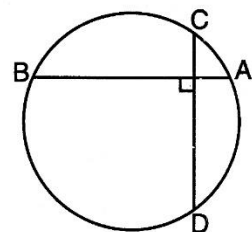
$\overline{AB}$  and  $\overline{AC}$  are two tangents to a circle at B and C  
 If  $m(\angle ABC) = 55^\circ$   
 , then  $m(\angle A) = \dots\dots\dots$

- [a]  $55^\circ$                       [b]  $70^\circ$                       [c]  $90^\circ$                       [d]  $110^\circ$

**(30) In the opposite figure :**

$m(\widehat{AC}) + m(\widehat{BD}) = \dots\dots\dots$

- [a]  $45^\circ$                       [b]  $90^\circ$   
 [c]  $180^\circ$                       [d]  $270^\circ$

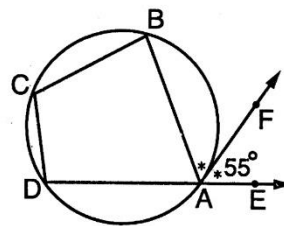


**(31) In the opposite figure :**

If  $E \in \overrightarrow{DA}$  and  $\overrightarrow{AF}$  bisects  $\angle EAB$

and  $m(\angle EAF) = 55^\circ$ , then  $m(\angle C) = \dots\dots\dots$

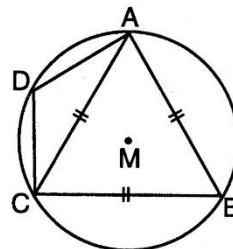
- [a]  $55^\circ$       [b]  $110^\circ$       [c]  $165^\circ$       [d]  $220^\circ$

**(32) In the opposite figure :**

If  $AB = AC = BC$

, then  $m(\angle D) = \dots\dots\dots$

- [a]  $70^\circ$       [b]  $80^\circ$       [c]  $90^\circ$       [d]  $120^\circ$

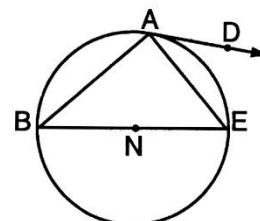
**(33) In the opposite figure :**

$\overrightarrow{AD}$  is a tangent to the circle N at A.

If  $m(\angle DAB) = 130^\circ$ , then  $m(\angle E) = \dots\dots\dots$

- [a]  $50^\circ$       [b]  $60^\circ$

- [c]  $70^\circ$       [d]  $80^\circ$

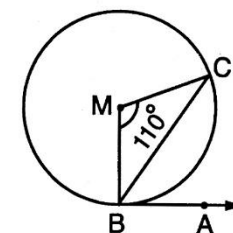
**(34) In the opposite figure :**

$\overrightarrow{BA}$  is a tangent to the circle M at B

and  $m(\angle CMB) = 110^\circ$

, then  $m(\angle ABC) = \dots\dots\dots$

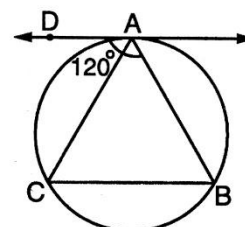
- [a]  $55^\circ$       [b]  $75^\circ$       [c]  $100^\circ$       [d]  $70^\circ$

**(35) In the opposite figure :**

$\overrightarrow{AD}$  is a tangent to a circle at A

and  $m(\angle DAB) = 120^\circ$ , then  $m(\angle ACB) = \dots\dots\dots$

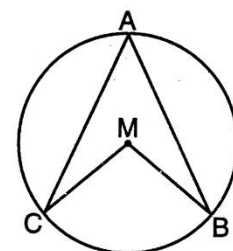
- [a]  $30^\circ$       [b]  $60^\circ$       [c]  $80^\circ$       [d]  $120^\circ$

**(36) In the opposite figure :**

If  $m(\angle BMC) - m(\angle A) = 50^\circ$

, then  $m(\angle A) = \dots\dots\dots$

- [a]  $40^\circ$       [b]  $50^\circ$       [c]  $100^\circ$       [d]  $130^\circ$

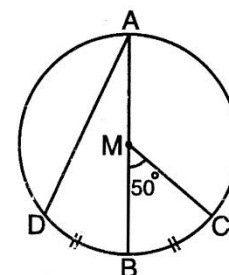
**(37) In the opposite figure :**

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

,  $m(\angle BMC) = 50^\circ$  and  $m(\widehat{BC}) = m(\widehat{BD})$

, then  $m(\angle BAD) = \dots\dots\dots$

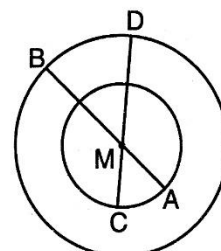
- [a]  $25^\circ$       [b]  $50^\circ$       [c]  $75^\circ$       [d]  $12.5^\circ$



(38) In the opposite figure :

Two circles are concentric at M  
and  $m(\widehat{AC}) = 50^\circ$ , then  $m(\widehat{BD}) = \dots\dots\dots$

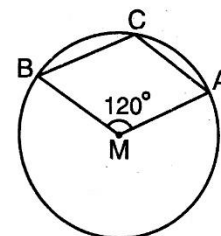
- [a]  $25^\circ$       [b]  $40^\circ$       [c]  $50^\circ$       [d]  $100^\circ$



(39) In the opposite figure :

If  $m(\angle AMB) = 120^\circ$   
, then  $m(\angle ACB) = \dots\dots\dots$

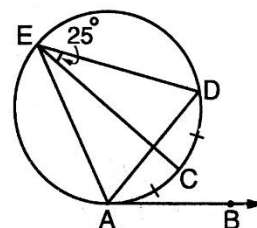
- [a]  $60^\circ$       [b]  $120^\circ$       [c]  $240^\circ$       [d]  $90^\circ$



(40) In the opposite figure :

$\overrightarrow{AB}$  is a tangent to a circle  
, C is the midpoint of  $\widehat{AD}$   
and  $m(\angle DEC) = 25^\circ$ , then  $m(\angle BAD) = \dots\dots\dots$

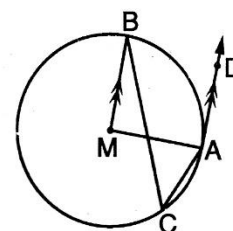
- [a]  $25^\circ$       [b]  $50^\circ$       [c]  $75^\circ$       [d]  $100^\circ$



(41) In the opposite figure :

$\overrightarrow{AD}$  is a tangent to the circle M and  $\overline{MB} \parallel \overrightarrow{AD}$   
, then  $m(\angle ACB) = \dots\dots\dots$

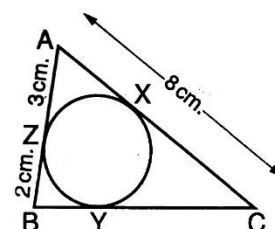
- [a]  $30^\circ$       [b]  $45^\circ$       [c]  $60^\circ$       [d]  $90^\circ$



(42) In the opposite figure :

$AC = 8$  cm. ,  $AZ = 3$  cm. and  $BZ = 2$  cm.  
, then  $BC = \dots\dots\dots$  cm.

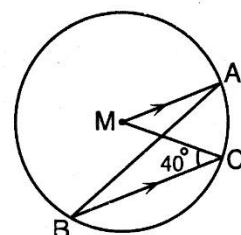
- [a] 5      [b] 7      [c] 10      [d] 13



(43) In the opposite figure :

If  $\overline{MA} \parallel \overline{BC}$  and  $m(\angle MCB) = 40^\circ$   
, then  $m(\angle ABC) = \dots\dots\dots$

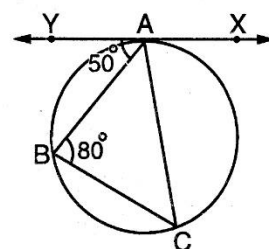
- [a]  $20^\circ$       [b]  $40^\circ$       [c]  $60^\circ$       [d]  $80^\circ$



(44) In the opposite figure :

If  $\overrightarrow{XY}$  is a tangent to a circle at A  
,  $m(\angle YAB) = 50^\circ$  and  $m(\angle ABC) = 80^\circ$   
, then  $m(\angle BAC) = \dots\dots\dots$

- [a]  $50^\circ$       [b]  $60^\circ$       [c]  $70^\circ$       [d]  $80^\circ$





(45) In the opposite figure :

$\overleftrightarrow{XY}$  is a tangent to a circle at A

If  $AB = AC$  and  $m(\angle YAC) = 50^\circ$

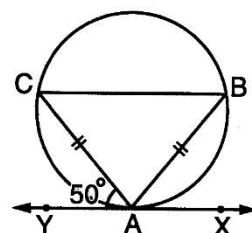
, then  $m(\widehat{BC}) = \dots\dots\dots$

[a]  $50^\circ$

[b]  $100^\circ$

[c]  $80^\circ$

[d]  $160^\circ$



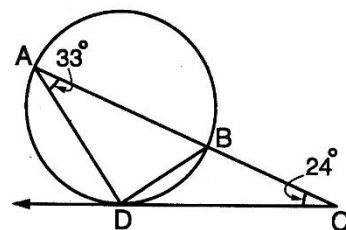
(46) In the opposite figure :

$\overleftrightarrow{CD}$  touches a circle at D

,  $m(\angle C) = 24^\circ$  and  $m(\angle A) = 33^\circ$

, then  $\overline{AB}$  is .....

[a] a diameter. [b] a tangent. [c] a chord. [d] a radius.



(47) In the opposite figure :

$\overleftrightarrow{AD}$  is a tangent to the circle M at A

and  $m(\angle MAC) = 25^\circ$

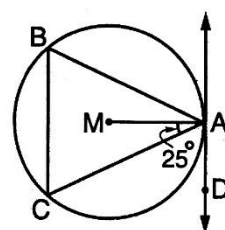
, then  $m(\angle ABC) = \dots\dots\dots$

[a]  $25^\circ$

[b]  $50^\circ$

[c]  $65^\circ$

[d]  $130^\circ$



(48) In the opposite figure :

If D is the midpoint of  $\widehat{AB}$

and  $m(\angle AMB) = 130^\circ$

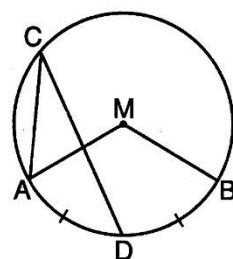
, then  $m(\angle ACD) = \dots\dots\dots$

[a]  $130^\circ$

[b]  $65^\circ$

[c]  $30^\circ$

[d]  $32.5^\circ$



(49) In the opposite figure :

If  $m(\angle C) = 60^\circ$

and  $m(\widehat{CB}) = 2m(\widehat{AC})$

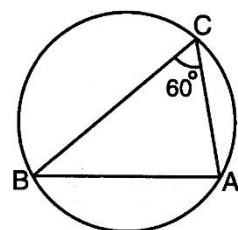
, then  $m(\angle B) = \dots\dots\dots$

[a]  $30^\circ$

[b]  $40^\circ$

[c]  $50^\circ$

[d]  $60^\circ$



(50) In the opposite figure :

If  $\overline{AD}$  is a diameter of the circle M

and the length of  $\widehat{AB} =$  the length of  $\widehat{BC}$

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

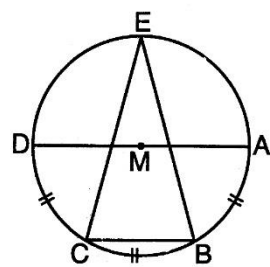
, then  $m(\angle BEC) = \dots\dots\dots$

[a]  $90^\circ$

[b]  $60^\circ$

[c]  $30^\circ$

[d]  $45^\circ$



(51) In the opposite figure :

If  $m(\angle A) = 40^\circ$

and  $m(\widehat{CD}) = 70^\circ$

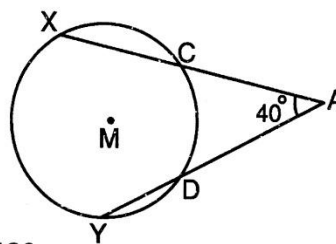
, then  $m(\widehat{XY}) = \dots\dots\dots$

[a]  $80^\circ$

[b]  $140^\circ$

[c]  $130^\circ$

[d]  $150^\circ$



(52) In the opposite figure :

If  $\overline{CA}$  is a tangent-segment to

the circle M at A and D is the

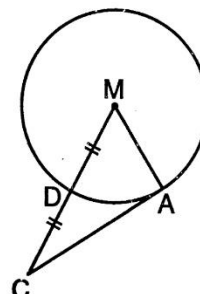
midpoint of  $\overline{CM}$ , then  $m(\widehat{AD})$

[a]  $30^\circ$

[b]  $40^\circ$

[c]  $50^\circ$

[d]  $60^\circ$



(53) In the opposite figure :

Two circles are concentric

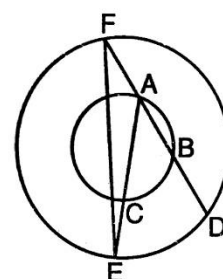
, then  $m(\widehat{BC}) \dots\dots\dots m(\widehat{DE})$

[a]  $>$

[b]  $<$

[c]  $=$

[d]  $\geq$



(54) In the opposite figure :

If a square of side length 14 cm. is

inscribed in a circle , then the perimeter of the

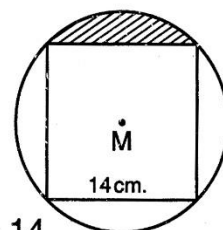
shaded region =  $\dots\dots\dots$  cm.

[a]  $\frac{7}{2} \sqrt{2} \pi$

[b]  $\frac{7}{2} \pi + 14$

[c]  $14 \pi$

[d]  $\frac{7}{2} \sqrt{2} \pi + 14$



(55) In the opposite figure :

If  $EA = EB = EC = ED$ ,

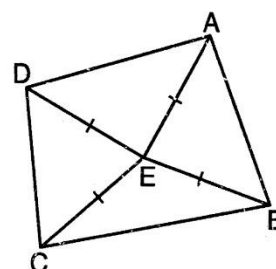
then the figure ABCD is a  $\dots\dots\dots$

[a] square.

[b] parallelogram

[c] rhombus.

[d] cyclic quadrilateral.



(56) In the opposite figure :

Two circles are concentric at M

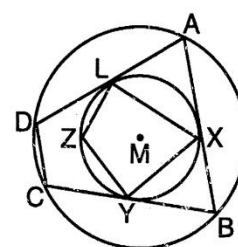
, then  $m(\angle X) + m(\angle Z) = \dots\dots\dots$

[a]  $m(\angle A) + m(\angle C)$

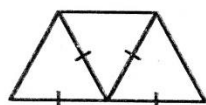
[b]  $2 [m(\angle A) + m(\angle C)]$

[c]  $\frac{1}{2} [m(\angle A) + m(\angle C)]$

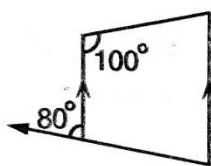
[d]  $m(\angle A) + m(\angle B)$



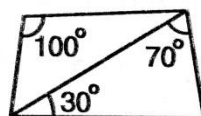
(57) Figure ..... is not a cyclic quadrilateral



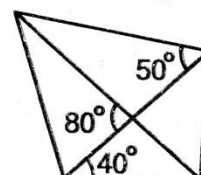
[a]



[b]



[c]



[d]

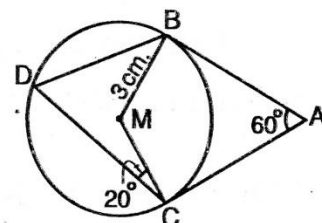
② In the opposite figure :

If  $\overline{AB}$  and  $\overline{AC}$  are two tangent-segments to the circle M

,  $MB = 3 \text{ cm}$ ,  $m(\angle A) = 60^\circ$

and  $m(\angle MCD) = 20^\circ$ ,

then choose the correct answer :



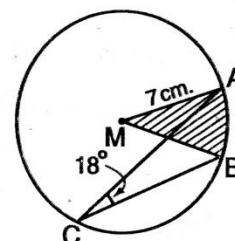
- |   |                 |                 |                |                 |
|---|-----------------|-----------------|----------------|-----------------|
| (1) $AB = \dots\dots\dots$              | [a] BD          | [b] DC          | [c] BM         | [d] AC          |
| (2) $m(\angle MAB) = \dots\dots\dots$   | [a] $40^\circ$  | [b] $20^\circ$  | [c] $30^\circ$ | [d] $45^\circ$  |
| (3) $MA = \dots\dots\dots \text{ cm}$ . | [a] $3\sqrt{3}$ | [b] 6           | [c] $\sqrt{3}$ | [d] $2\sqrt{3}$ |
| (4) $m(\angle M) = \dots\dots\dots$     | [a] $120^\circ$ | [b] $240^\circ$ | [c] $60^\circ$ | [d] $90^\circ$  |
| (5) $m(\angle MCB) = \dots\dots\dots$   | [a] $20^\circ$  | [b] $30^\circ$  | [c] $10^\circ$ | [d] $40^\circ$  |
| (6) $m(\angle CBD) = \dots\dots\dots$   | [a] $60^\circ$  | [b] $70^\circ$  | [c] $80^\circ$ | [d] $90^\circ$  |

③ In the opposite figure :

If the radius length of the circle M is 7 cm.

and  $m(\angle ACB) = 18^\circ$ ,

then choose the correct answer :



- |  |          |         |          |          |
|--|----------|---------|----------|----------|
| (1) The length of $\widehat{AB} = \dots\dots\dots \text{ cm}$ .  | [a] 1.1  | [b] 2.2 | [c] 4.4  | [d] 8.8  |
| (2) The area of the shaded part = $\dots\dots\dots \text{ cm}^2$ | [a] 15.4 | [b] 7.7 | [c] 30.8 | [d] 3.85 |

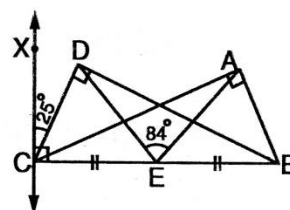
④ In the opposite figure :

If E is the midpoint of  $\overline{BC}$ ,  $\overline{CX} \perp \overline{BC}$ ,  $m(\angle DCX) = 25^\circ$ ,

$m(\angle BAC) = m(\angle BDC) = 90^\circ$

and  $m(\angle AED) = 84^\circ$ ,

then choose the correct answer :



- |                                       |                |                |                |                  |
|---------------------------------------|----------------|----------------|----------------|------------------|
| (1) $m(\angle ABD) = \dots\dots\dots$ | [a] $84^\circ$ | [b] $42^\circ$ | [c] $21^\circ$ | [d] $168^\circ$  |
| (2) $m(\angle DBC) = \dots\dots\dots$ | [a] $25^\circ$ | [b] $50^\circ$ | [c] $75^\circ$ | [d] $12.5^\circ$ |



## General Exercises on Geometry

### First : Completion questions

- ① (1) the centre of the circle , two radii.  
 (2) on the circle , two chords.  
 (3) equal in length.  
 (4) are equal in measure.  
 (5) equal in measure. (6)  $2x^\circ$   
 (7) half (8) a right angle.  
 (9) equal in measure.  
 (10) supplementary.  
 (11) The measure of the interior angle at the opposite vertex.  
 (12) parallel. (13) equal in length.  
 (14) equal to. (15) half (16)  $50^\circ$   
 (17)  $240^\circ$  (18)  $\frac{1}{3}$   
 (19)  $\frac{1}{4} \times 2\pi r$ . (20) 30 cm. (21)  $330^\circ$   
 (22)  $95^\circ$  (23) ADB  
 (24)  $120^\circ, 140^\circ$  (25) 3  
 (26) 2 (27)  $90^\circ$   
 (28)  $50^\circ, 100^\circ$  (29)  $50^\circ$  (30)  $70^\circ$   
 (31)  $30^\circ$  (32)  $60^\circ$  (33)  $80^\circ$   
 (34)  $60^\circ$  (35)  $40^\circ$  (36)  $80^\circ$   
 (37)  $80^\circ$  (38)  $25^\circ$  (39)  $50^\circ$   
 (40)  $120^\circ$  (41)  $40^\circ$  (42)  $135^\circ$   
 (43)  $130^\circ$  (44) 5 (45)  $33^\circ$   
 (46)  $14^\circ$  (47)  $40^\circ$  (48)  $20^\circ$   
 (49)  $75^\circ$  (50)  $115^\circ$  (51)  $80^\circ$
- ② (1)  $25^\circ$  (2)  $130^\circ$  (3)  $65^\circ$
- ③ (1)  $90^\circ$  (2)  $110^\circ$  (3)  $35^\circ$  (4)  $20^\circ$
- ④ (1) 50.24 (2) 6.28
- ⑤ (1)  $120^\circ$  (2) 22
- ⑥ (1) 3 (2)  $80^\circ$  (3)  $50^\circ$  (4)  $80^\circ$

### Second : Multiple choice questions

- ① (1) [b] (2) [c] (3) [a] (4) [a] (5) [c]  
 (6) [a] (7) [c] (8) [c] (9) [a] (10) [c]  
 (11) [d] (12) [a] (13) [b] (14) [c] (15) [d]  
 (16) [c] (17) [b] (18) [b] (19) [d] (20) [c]

- (21) [d] (22) [a] (23) [a] (24) [c] (25) [d]  
 (26) [d] (27) [b] (28) [d] (29) [b] (30) [c]  
 (31) [b] (32) [d] (33) [a] (34) [a] (35) [b]  
 (36) [b] (37) [a] (38) [c] (39) [b] (40) [b]  
 (41) [b] (42) [b] (43) [a] (44) [a] (45) [d]  
 (46) [a] (47) [c] (48) [d] (49) [b] (50) [c]  
 (51) [d] (52) [d] (53) [a] (54) [d] (55) [d]  
 (56) [a] (57) [d]

- ② (1) [d] (2) [c] (3) [b]  
 (4) [a] (5) [b] (6) [b]
- ③ (1) [c] (2) [a]
- ④ (1) [b] (2) [a]

With my best wishes for you

Mr. Michael Gamil