



Provincial department of Education,
Sabaragamuwa, week School

Subject- Mathematics

week - 38

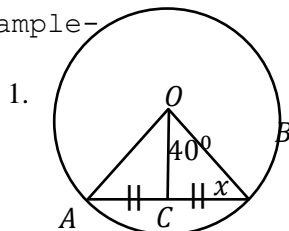
Grade-10

Translated by, Mr. N.M.D.T.H Bandara

27. Chords of a circle

- The straight line joining the center of the circle to the mid point of a chord is perpendicular to the chord.
- The perpendicular drawn from the center of a circle to chord bisect the chord.

Example-



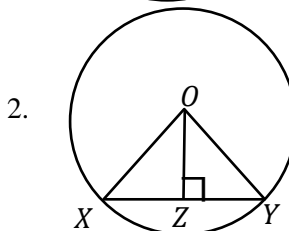
c is the mid point of the chord of the circle with the center o

if $C\hat{O}B = 40^\circ$ find the value of $O\hat{B}C$

$$O\hat{C}B = 90^\circ$$

$$\therefore O\hat{B}C = 90^\circ - 40^\circ$$

$$O\hat{B}C = 50^\circ$$



oz is the perpendicular drawn to chord xy of the circle with the center o .

If $XY = 12\text{cm}$, $OZ = 8\text{cm}$. Find the value of the radius of the circle.

Applying Pythagoras theorem to the triangle oyz

$$OY^2 = OZ^2 + ZY^2$$

$$OY^2 = 8^2 + 6^2$$

$$OY^2 = 64 + 36$$

$$OY^2 = 100$$

$$\underline{\underline{OY = 10\text{cm}}}$$

Solve these.

1. O is the center of the circle and R is the mid point of the chord PQ . If $O\hat{P}R = 35^\circ$ find the value of $P\hat{O}R$.
2. O is the center of the circle and N is the mid point of the chord LM . if $N\hat{O}M = 45^\circ$ show that ONM is an isosceles triangle.
3. C is the center of the circle. Perpendicular drawn from the center meets the chord AB at D . if $AB = 24\text{cm}$, $CD = 5\text{cm}$. Find the value of the radius.
4. AB, BC, CA are same chords. The length of the perpendicular drawn from the center to AB chord is 6cm . if the radius is 10cm . find the perimeter.