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Chords of a circle

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



c is the mid point of the chord of the circle with the center o if $C\hat{O}B = 40^0$ find the value of $O\hat{B}C$

$$OCB = 90^{\circ}$$
$$\therefore \underline{OBC} = 90^{\circ} - 40^{\circ}$$
$$OBC = 50^{\circ}$$

oz is the perpndicular drawn to chord xy of the circle with the cnter o. If XY = 12cm, OZ = 8cm. Find the value of the radius of the circle.

Applying Pythagoras theorem to the triangle oyz $\label{eq:optimal} OY^2 = OZ^2 + ZY^2$

 $OY^2 = 8^2 + 6^2$ $OY^2 = 64 + 36$ $OY^2 = 100$ OY = 10cm

Solve these.

- 1. *O* is the center of the circle and R is the mid point of the chord *PQ*. If $O\hat{P}R = 35^{0}$. *find the value of POR*.
- 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 = 24cm, CD = 5cm. 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 6*cm*. *if* t the radius is 10*cm*. *find* the peremeter.