Practice Challenge - Subjective

Subject: Mathematics

Topic : Circles Exam Prep 1   Class: X

1. In Fig. 8.64, PA and PB are tangents from an external point P to a circle with centre O. LN touches the circle at M. Prove that PL+ML=PN+MN.
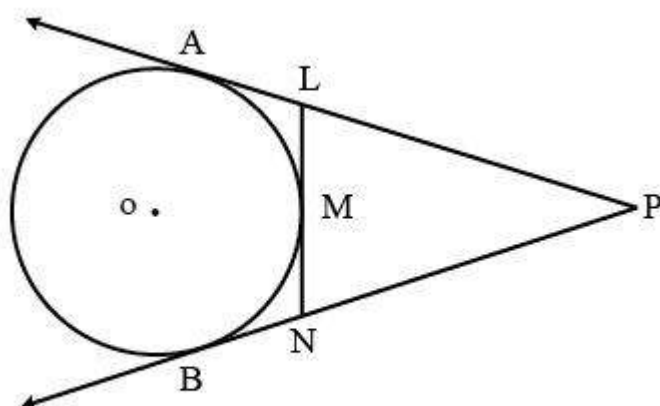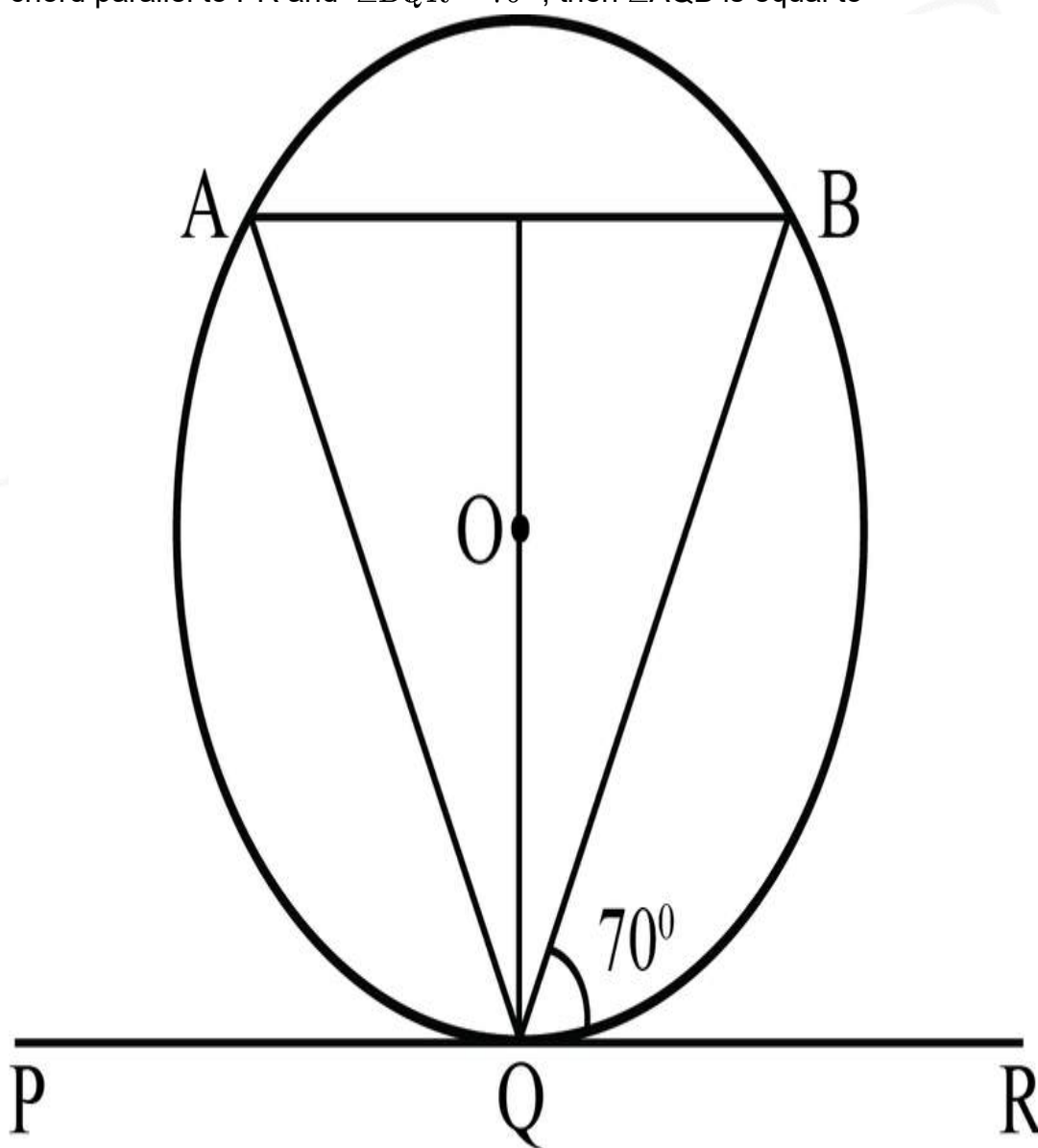

Fig.8.64

2. From a point P, two tangents PA and PB are drawn to a circle with centre O. If OP = diameter of the circle, show that ΔAPB is equilateral.

3. If ΔABC is isosceles with AB = AC and C(O,r) is the incircle of the ΔABC touching BC at L, prove that L bisects BC.

4. Let s denotes the semi – perimeter of a Δ ABC, in which BC=a, CA=b and AB=c , if a circle touches the sides BC, CA , AB at D,E,F respectively prove that BD = s - b.

5. AB is a diameter of a circle and AC is the chord such that $\angle$ BAC = $30°$. If the tangent at C intersects AB extended at D, then BC = BD.

6.   Write 'True' or 'False' and justify your answer in each of the following :
     (i) The length of tangents from an external point P on a circle is always greater than the radius of the circle.
     (ii) The length of tangents from an external point P on a circle with centre O is always less than OP.

7.   In figure. If PQR is the tangent to a circle at Q whose centre is O, AB is a chord parallel to PR and $\angle BQR = 70^\circ$, then $\angle AQB$ is equal to

8. From a point P which is at a distance of 13 cm from the centre O of a circle of radius 5 cm, the pair of tangents PQ and PR to the circle is drawn. Then, the area of the quadrilateral PQOR is