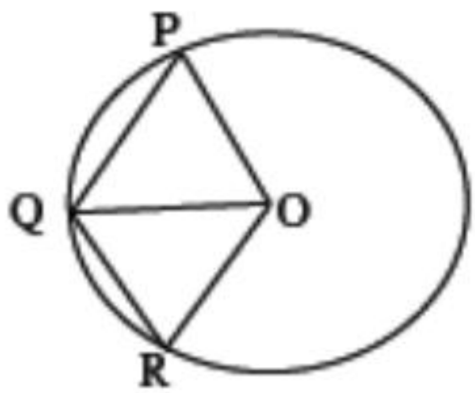
Chapter- Circles

Q1.

From a point P, two tangents PA are drawn to a circle with center O. If OP=diameter of the circle show that triangle APB is equilateral.

Q2.

In the given fig OPQR is a rhombus, three of its vertices lie on a circle with centre O If the area of the rhombus is $32\sqrt{3}$ cm^2. Find the radius of the circle.



Q3.

The radius of the in circle of a triangle is 4cm and the segments into which one side is divided by the point of contact are 6cm and 8cm. Determine the other two sides of the triangle.

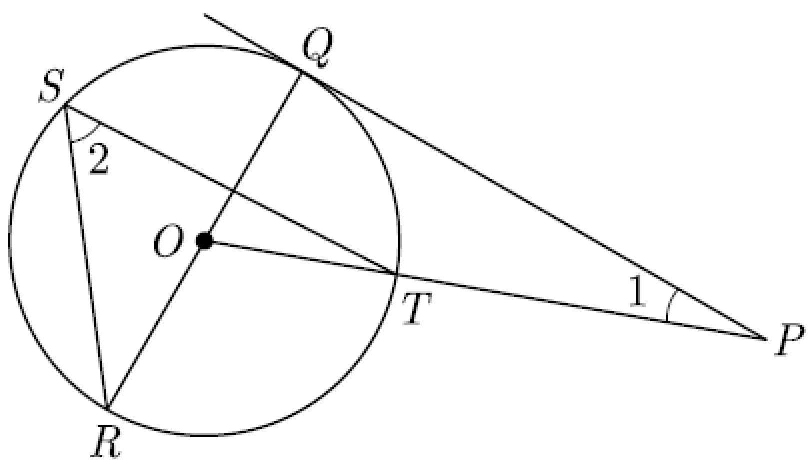
Q4.

13. Prove that the intercept of a tangent between two parallel tangents to a circle subtends a right angle at the centre.

Q5. If d_1, d_2 ($d_2 > d_1$) be the diameters of two concentric circles and c be the length of a chord of a circle which is tangent to the other circle, prove that $(d_2)^2 = c^2 + (d_1)^2$.

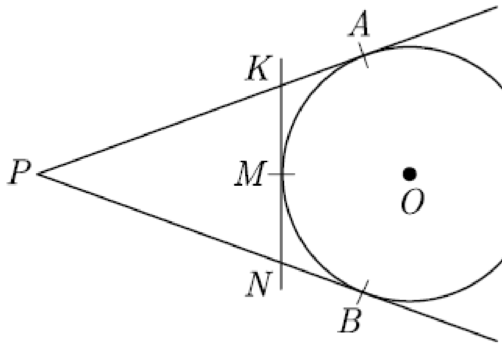
Q6.

.In figure PQ is a tangent from an external point P to a circle with centre O and OP cuts the circle at T and $\angle QOR$ is a diameter. If $\angle POR = 130^\circ$ and S is a point on the circle, find $\angle 1 + \angle 2$.



Q7.

.In given figure, PA and PB are tangents from a point P to the circle with centre O. At the point M, other tangent to the circle is drawn cutting PA and PB at K and N. Prove that the perimeter of $\Delta PNK = 2PB$



Q8.

.Prove that the parallelogram circumscribing a circle is a rhombus.

Q9.

.From a point T outside a circle of centre O, tangents TP and TQ are drawn to the circle. Prove that OT is the right bisector of line segment PQ.

Q10.

If a circle touches the side BC of a triangle ABC at P and extended sides AB and AC at Q and R, respectively, prove that

$$AQ = \frac{1}{2}(BC + CA + AB)$$