

Tangents and secants to a circle

Find the length of the tangent to a circle with centre 'O' and radius = 6 cm. from a point P such that $OP = 10$ cm.

1. Fill in the blanks

- (i) A tangent to a circle touches it in point (s).
- (ii) A line intersecting a circle in two points is called a
- (iii) Number of tangents can be drawn to a circle parallel to the given tangent is
- (iv) The common point of a tangent to a circle and the circle is called
- (v) We can draw tangents to a given circle.
- (vi) A circle can have parallel tangents at the most

2. A tangent PQ at a point P of a circle of radius 5 cm meets a line through the centre O at a point Q so that $OQ = 13$ cm. Find length of PQ.

3. Draw a circle and two lines parallel to a given line drawn outside the circle such that one is a tangent and the other, a secant to the circle.

4. Calculate the length of tangent from a point 15 cm away from the centre of a circle of radius 9 cm.

5. Prove that the tangents to a circle at the end points of a diameter are parallel.

6. Two concentric circles of radii 5 cm and 3 cm are drawn. Find the length of the chord of the larger circle which touches the smaller circle.

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

8. A triangle ABC is drawn to circumscribe a circle of radius 3 cm. such that the segments BD and DC into which BC is divided by the point of contact D are of length 9 cm. and 3 cm. respectively (See adjacent figure). Find the sides AB and AC.

5. Draw a circle of radius 6 cm. From a point 10 cm away from its centre, construct the pair of tangents to the circle and measure their lengths. Verify by using Pythagoras Theorem.

6. Construct a tangent to a circle of radius 4 cm from a point on the concentric circle of radius 6 cm and measure its length. Also verify the measurement by actual calculation.

7. Draw a circle with the help of a bangle. Take a point outside the circle. Construct th