



CBSE 10th

TEEVRA EDUTECH PVT. LTD.

Q.1 How many tangents can a circle have?

Sol: A circle can have infinitely many tangents since there are infinitely many points on the circumference of the circle and at each point of it, it has a unique tangent.

Q.2 Fill in the blanks:

(i) A tangent to a circle intersects it in _____ point(s).

(ii) A line intersecting a circle in two points is called a _____.

(iii) A circle can have _____ parallel tangents at the most.

(iv) The common point of a tangent to a circle and the circle is called _____.

Sol:

(i) A tangent to a circle intersects it in one point.

(ii) A line intersecting a circle in two points is called a secant.

(iii) A circle can have two parallel tangents at the most.

(iv) The common point of a tangent to a circle and the circle is called point of contact.

Q.3 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 $OQ = 12$ cm. Length PQ is:

(A) 12 cm

(B) 13 cm

(C) 8.5 cm

(D) $\sqrt{119}$ cm

Sol:

\therefore PQ is the tangent and OP is the radius through the point of contact.

$\angle OPQ = 90^\circ$ [The tangent at any point of a circle is to the radius through the point of contact]

In right triangle OPQ,

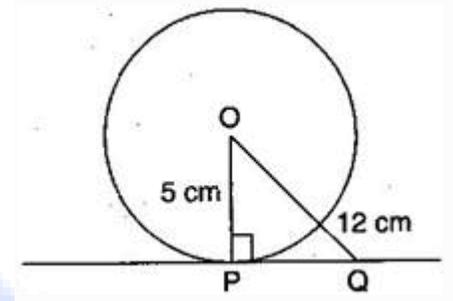
$OQ^2 = OP^2 + PQ^2$ [By Pythagoras theorem]

$$\Rightarrow (12)^2 = (5)^2 + PQ^2$$

$$\Rightarrow 144 = 25 + PQ^2$$

$$\Rightarrow PQ^2 = 144 - 25 = 119$$

$$\Rightarrow PQ = \sqrt{119} \text{ cm}$$



Q.4 Draw a circle and two lines parallel to a given line such that one is a tangent and the other, a secant to the circle.

Sol:

