

**RD SHARMA**  
**Solutions**  
**Class 10 Maths**  
**Chapter 10**  
**Ex 10. 1**

**1. Fill in the blanks:**

(i) The common point of tangent and the circle is called \_\_\_\_\_.

**Soln:** point of contact.

(ii) A circle may have \_\_\_\_\_ parallel tangent.

**Soln :** two

(iii) A tangent to a circle intersects it in \_\_\_\_\_ point.

**Soln:** one

(iv) A line intersecting a circle in two points is called a \_\_\_\_\_

**Soln:** secant.

(v) The angle between tangent at a point P on circle and radius through the point is \_\_\_\_\_

**Soln:**  $90^\circ$ .

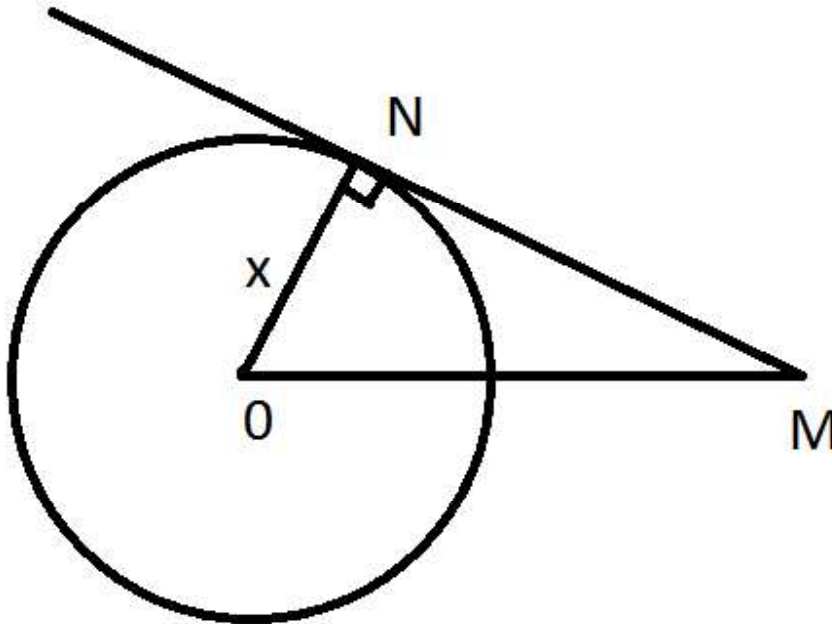
**Q 2. How many tangents can a circle have?**

**Ans:**

**Tangent:** a line intersecting circle in one point is called a tangent

As there are infinite number of points on the circle , a circle has many ( infinite ) tangents.

Q 3. 'O' is the centre the circle shown below with a radius of 8 cm. The circle cuts the tangent AB through O at B such that AB = 15 cm. Find OB.



**Ans:**

Given data : AB = 15 cm

OA = 8 cm ( radius of the circle )

We know that : the tangent cuts the circle at 90 degrees. Therefore, OA is the hypotenuse of the triangle OAB . Hence, the longest side can be found by using pythagoras Theorem.

We have,

OB = 17 cm

Therefore, OB = 17 cm

Q 4. If the tangent at point P to the circle with centre O cuts a line through O at Q such that PQ = 24 cm and OQ = 25 cm . find the radius of the circle.

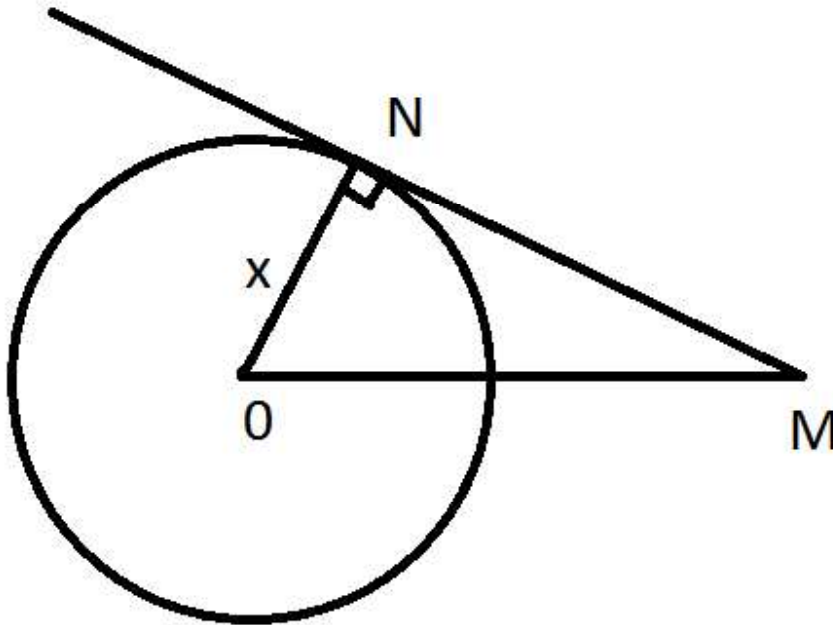
**Ans :**

given data:

$$PQ = 24 \text{ cm}$$

$$OQ = 25 \text{ cm}$$

$$OP = \text{radius} = ?$$



P is a point of contact , at point of contact , tangent and radius are perpendicular to each other.

Therefore triangle is right angled triangle angle  $OPQ = 90^\circ$

BY pythagoras theorem,

$$OP = 7 \text{ cm}$$

Therefore ,  $OP = \text{radius} = 7 \text{ cm}$