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CBSE Class 10-Mathematics: Chapter – 11 Constructions Part 16 (For CBSE, ICSE, IAS, NET, NRA 2022)

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Question 28:

Draw a circle with the help of a bangle. Take a point outside the circle. Construct the pair of tangents from this point to the circle.

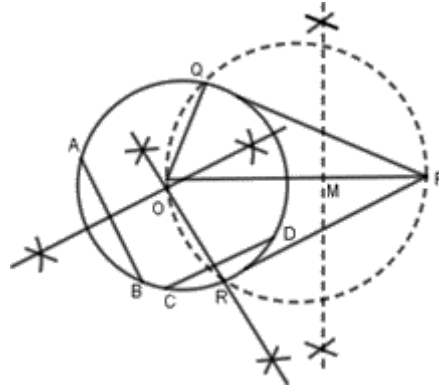
Answer:

To construct: A circle with the help of a bangle. Take a point outside the circle. Construct the pair of tangents from this point to the circle.

Steps of Construction:

- (a) Draw a circle with the help of a bangle.
- (b) Take two non-parallel chords AB and CD of this circle.
- (c) Draw the perpendicular bisectors of AB and CD. Let these intersect at O. Then O is the center of the circle draw.
- (d) Take a point P outside the circle.
- (e) Join PO and bisect it. Let M be the mid-point of PO.
- (f) Taking M as center and MO as radius, draw a circle. Let it intersects the given circle at the points Q and R.
- (g) Join PQ and PR.

Then PQ and PR are the required two tangents.



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Justification: Join OQ and OR.

Then, $\angle PQO$ is an angle in the semicircle.

$$\Rightarrow \angle PQO = 90^\circ$$

$$\Rightarrow PQ \perp OQ$$

Since OQ is a radius of the given circle, PQ has to be a tangent to the circle. Similarly, PR is also a tangent to the circle.

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