

CHAPTER 11

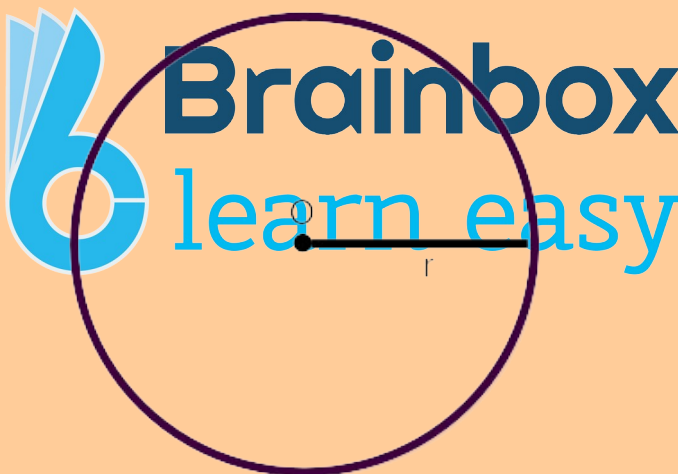
Constructions

II. Construction of a tangent to a circle from a point on it, when the centre of the circle is not given:

Steps of construction:

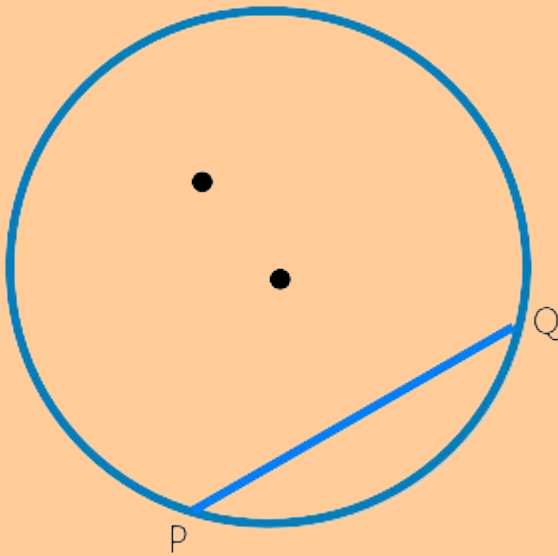
Step I:

Draw a circle of radius ' r ' cm.



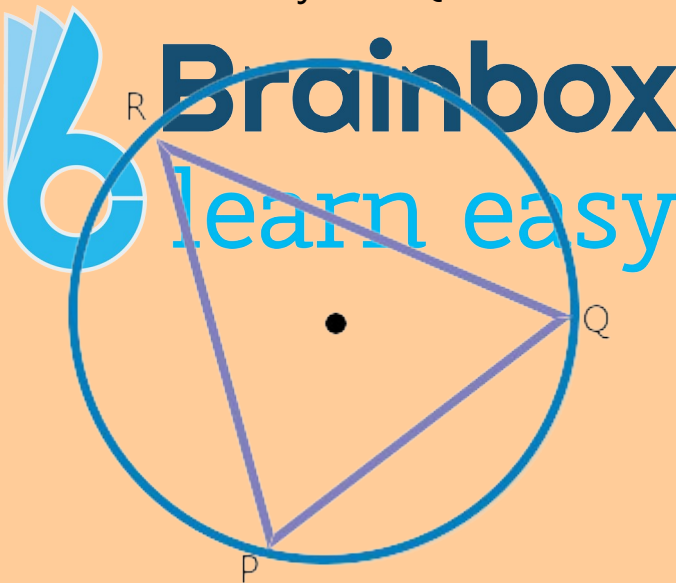
Step II:

Take a point ' P ' on it and draw any chord PQ through ' P ' in the circle.



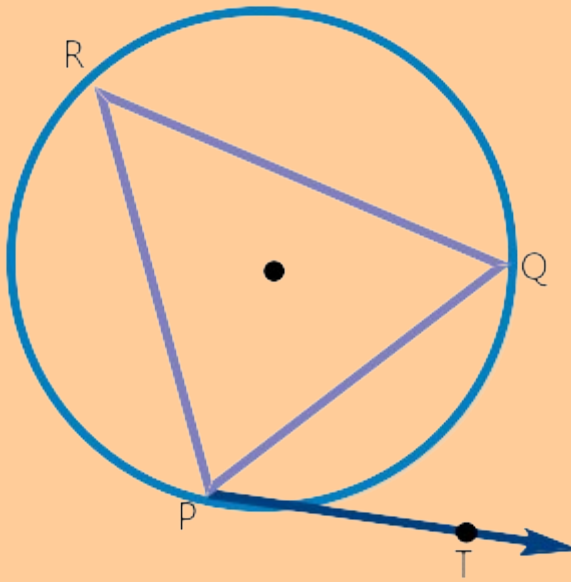
Step III:

Take a point 'R' on the major arc QP. Join RP and RQ.



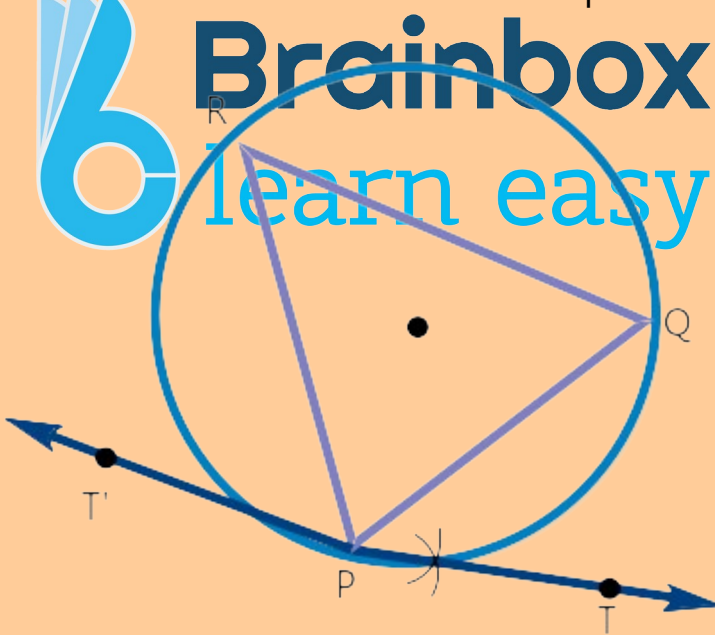
Step IV:

Construct $\angle QPT = \angle PRQ$.



Step V:

Produce TP to T' such that $T'PT$ is the required tangent at 'P'.



Example:

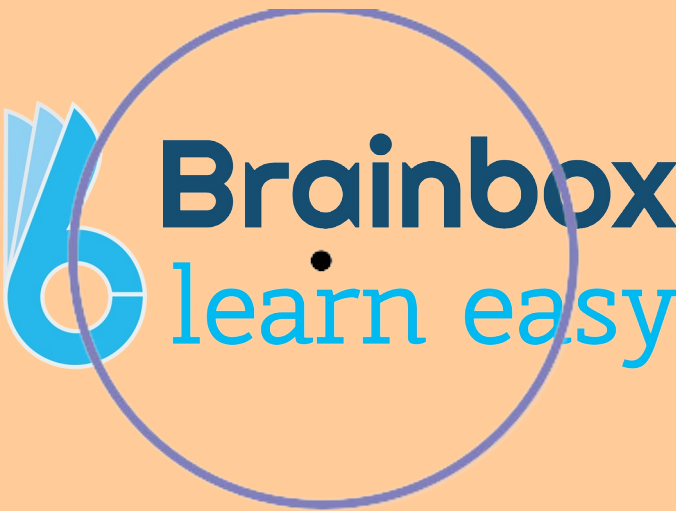
Draw a tangent to a circle of radius 4 cm through a point on it without using the centre.

Sol.

Steps of construction:

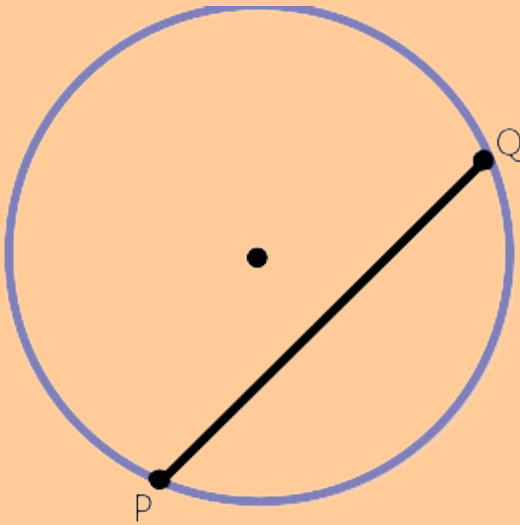
Step I:

Draw a circle of radius 4 cm and take a point 'P' on the circle.



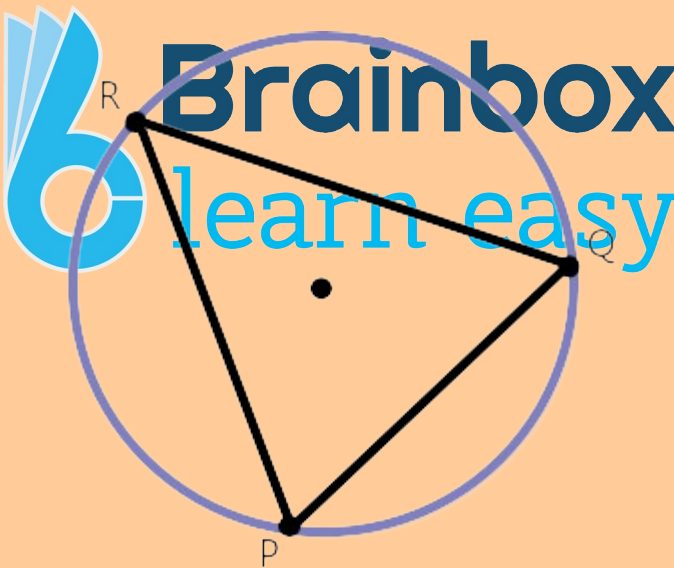
Step II:

Draw a chord PQ through the point 'P' in the circle.



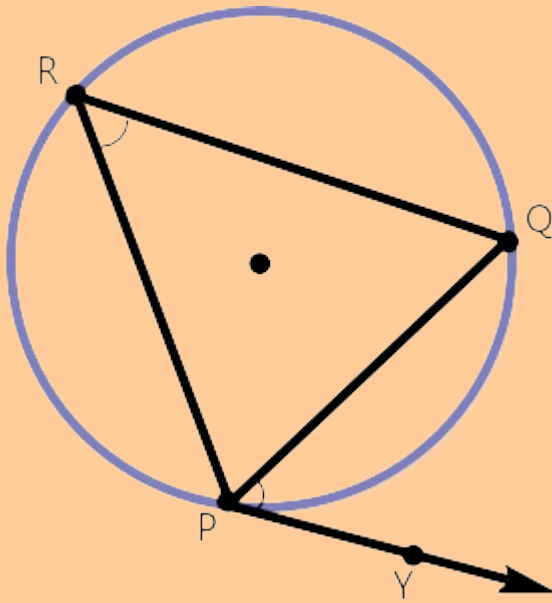
Step III:

Take a point 'R' on the major arc and join PR and PQ.



Step IV:

Taking PQ as base, construct $\angle QPY = \angle PRQ$.



Step V:

Produce YP to Y' . Then $Y'PY$ is the required tangent at point 'P'.

Brainbox
learn easy

