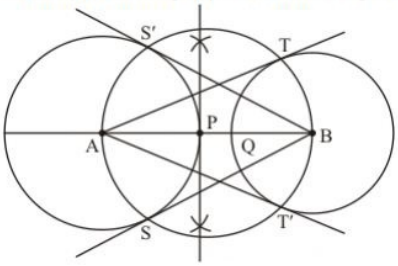
Constructions Ex 11.3 Q3

Answer :

Given that

Construct a circle of radius $3\,\text{cm}$, and let a point P and Q extended diameter each at distance of 7cm from its centre. Construct the pair of tangents to the circle from these two points P and Q.

We follow the following steps to construct the given



Step of construction

Step: I First of all we draw a line $AB = 8\,\text{cm}$.

Step: II taking A as a centre and draw a circle of radius $= 4\,\text{cm}$. Similarly, taking B as a centre and draw a circle of radius $= 3\,\text{cm}$.

Step: III draw the perpendicular bisector of AP and BQ

Step IV : draw the another circle with taking the bisector point as centre and radius = mid point of AP and BQ which cut the point S, S' and T, T'

Step: V joins AT, AT' and and BS, BS' respectively. AT, AT' as well as BS, BS' to obtain the require tangents.

Thus, AT and AT', BS and BS' are the required tangents.

Constructions Ex 11.3 Q4

Answer :

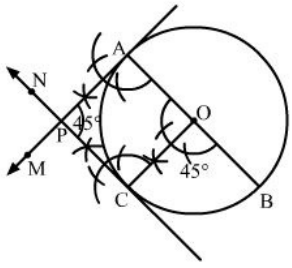
Steps of Construction

Step 1. Draw a circle with centre O and radius 4.5 cm.

Step 2. Draw any diameter AOB of the circle.

Step 3. Construct BOC = 45° such that radius OC cuts the circle at C.

Step 4. Draw AM ⊥ AB and CN ⊥ OC. Suppose AM and CN intersect each other at P.



Here, AP and CP are the pair of tangents to the circle inclined to each other at an angle of 45°.

Constructions Ex 11.3 Q5

Answer :

Steps of Construction

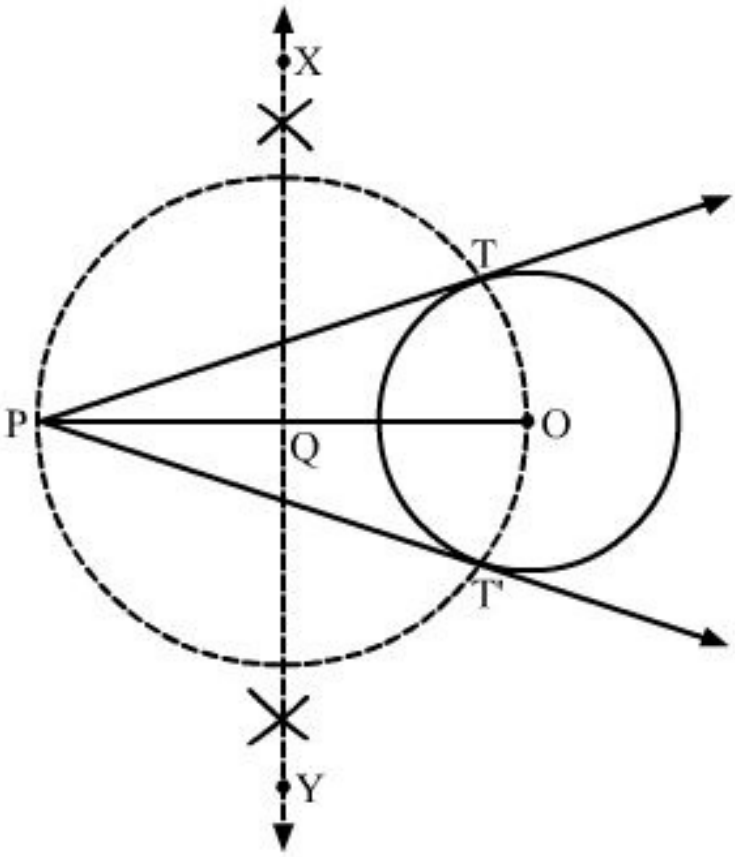
Step 1. Draw a circle with O as centre and radius 3.5 cm.

Step 2. Mark a point P outside the circle such that OP = 6.2 cm.

Step 3. Join OP. Draw the perpendicular bisector XY of OP, cutting OP at Q.

Step 4. Draw a circle with Q as centre and radius PQ (or OQ), to intersect the given circle at the points T and T'.

Step 5. Join PT and PT'.



Here, PT and PT' are the required tangents.

********** END **********