

Maths 10th Circles Paper 2

Total Time: 1 Hour 15 Minutes

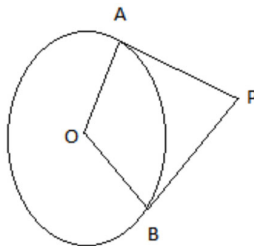
Total Marks: 40

General Instructions:

1. All questions are **compulsory**.
2. There is no choice in any of the questions.
3. Question numbers **1 to 2** in Section A are two-mark questions.
4. Question numbers **3 to 6** in Section A are three-mark questions.
5. Question numbers **7 to 12** in Section A are four-mark questions.

Question 1. Two concentric circles of radii a and b ($a > b$) are given. Find the length of the chord of the larger circle which touches the smaller circle.

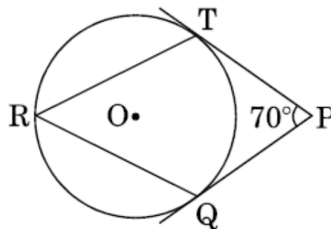
Question 2. In the given figure PA and PB are tangents to a circle with centre O . If $\angle APB = (2x + 3)^\circ$ and $\angle AOB = (3x + 7)^\circ$, then find the value of x .



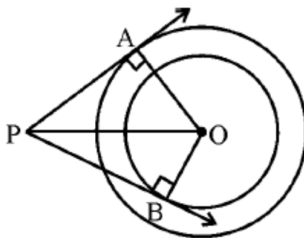
Question 3. At one end A of diameter AB of a circle of radius 5 cm, tangent XAY is drawn to the circle. Then find the length of the chord CD parallel to XY and at a distance 8 cm from A .

Question 4. If PQR is the tangent to a circle at Q , whose center is O , AB is a chord parallel to PR and $\angle BQR = 70^\circ$, then find the $\angle AQB$.

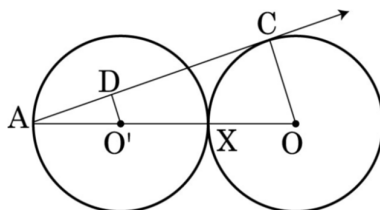
Question 5. In the given figure, O is the centre of a circle. PT and PQ are tangents to the circle from an external point P . If $\angle TPQ = 70^\circ$, find $\angle TRQ$.



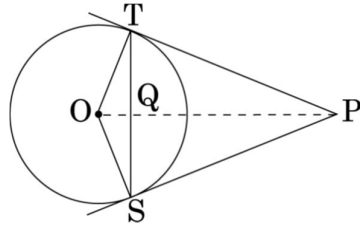
Question 6. In given figure, there are two concentric circles of radii 6 cm and 4 cm with center O . If AP is a tangent to the larger circle and BP to the smaller circle and length of AP is 8 cm, find the length of BP .



Question 7. In given figure, two equal circles, with centers O and O' , touch each other at X . OO' produced meets the circle with center O' at A . AC is tangent to the circle with center O , at the point C . $O'D$ is perpendicular to AC . Find the value of DO'/CO .

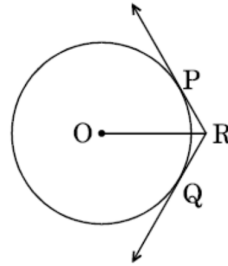


Question 8. In given figure, from external point P, two tangents PT & PS are drawn to a circle with centre O & radius r. If $OP=2r$, show that $\angle OTS = \angle OST = 30^\circ$.



Question 9. Prove that the tangent drawn at the mid-point of an arc of a circle is parallel to the chord joining the end points of the arc.

Question 10. In given figure, two tangents RQ and RP are drawn from an external point R to the circle with centre O. If $\angle PRQ = 120^\circ$, then prove that $OR = PR + RQ$.



Question 11. XY and PQ are two parallel tangents to a circle with centre O and another tangent AB with point of contact C intersecting XY at A and PQ at B. Prove that $\angle AOB = 90^\circ$.

Question 12. In given figure, O is the centre of the circle and TP is the tangent to the circle from an external point T. If $\angle PBT = 30^\circ$, prove that $BA: AT = 2:1$.

