



INDIAN SCHOOL NIZWA - WORKSHEET

MATHEMATICS

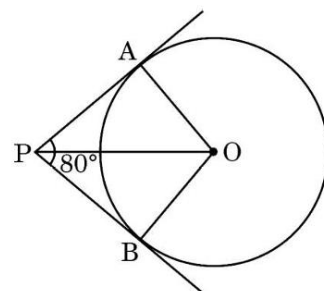
10. Circles

Name: _____

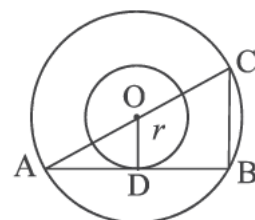
Date: _____

Class: X Sec: ____

- For given two non intersecting circles, maximum number of tangents can be drawn are _____.
a) 0 b) 2 c) 4 d) infinite
- If two tangents are inclined at 120° , then angle formed at the centre by the line segments joining the point of contacts is _____.
a) 20° b) 80° c) 120° d) 150°
- For a circle with center O and radius 5 cm, which of the following statements is true?
P: Distance between every pair of parallel tangents is 5cm.
Q: Distance between every pair of parallel tangents is 10cm.
R: Distance between every pair of parallel tangents must be between 5cm and 10 cm.
S: There does not exist a point outside the circle from where length of tangent is 5cm.
a) P b) Q c) R d) s
- If tangents PA and PB drawn from an external point P to the circle with centre O are inclined to each other at an angle of 80° as shown in the given figure, then the measure of $\angle POA$ is :
a) 40° b) 50°
c) 60° d) 80°



- In the adjoining figure, AC is diameter of larger circle with centre O. AB is tangent to smaller circle with centre O. If $OD=r$, then BC is equal to :
a) r b) $3r/2$ c) 2r d) 4r

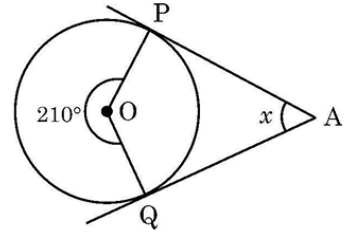


- Assertion (A):** Tangents drawn at the end points of a diameter of a circle are always parallel to each other.
Reason(R): The lengths of tangents drawn to a circle from a point outside the circle are always equal.
- Assertion(a):** If two tangents are drawn to a circle from an external point, then they subtend equal angles at the center from the circle.
Reason(R): A parallelogram circumscribing a circle is a rhombus.



INDIAN SCHOOL NIZWA - WORKSHEET

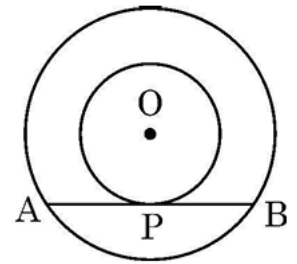
8. In the adjoining figure, AP and AQ are tangents to the circle with centre O. If reflex $\angle POQ = 210^\circ$, the value of $2x$ is
a) 30° b) 60° c) 120° d) 300°



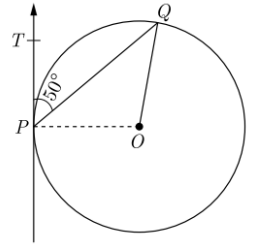
9. At a given point on the circle, how many tangents can be drawn?
a) 1 b) 2 c) 3 d) 4
10. From an external point Q, the length of tangent to a circle is 12 cm and the distance of Q from the centre of circle is 13 cm. The radius of circle (in cm) is _____
a) 10 b) 5 c) 12 d) 7

11. In the adjoining figure, the sum of radii of two concentric circles is 16cm. The length of chord AB which touches the inner circle at P is 16cm. The difference of the radii of the given circles is:

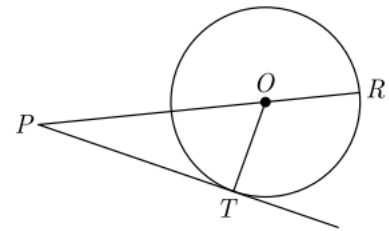
a) 8cm b) 4cm c) 2cm d) 3cm



12. In the given figure, O is the centre of circle. PQ is a chord and PT is tangent at P which makes angle of 50° with PQ. Find $\angle POQ$.



13. In the given figure, on a circle of radius 7cm, tangent PT is drawn from a point P such that $PT=24$ cm. If O is the centre of the circle, then the length of PR is _____

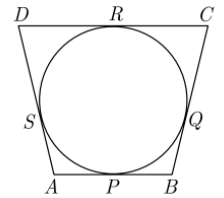


14. AB and CD are two common tangents to circles which touch each other at a point C. If D lies on AB such that $CD = 4$ cm then AB is _____.

15. In the given figure, a circle touches all the four sides of quadrilateral ABCD with $AB=6$ cm, $BC=7$ cm and $CD=4$ cm, then length of AD is _____



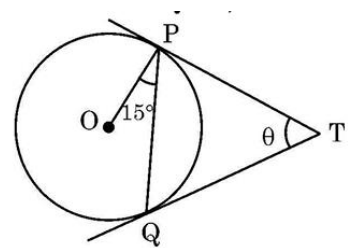
INDIAN SCHOOL NIZWA - WORKSHEET



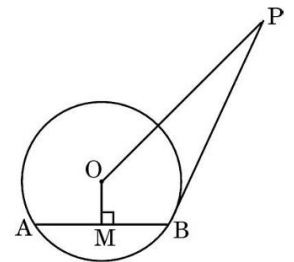
16. Two concentric circles are of radii 10 cm and 8 cm, then the length of the chord of the larger circle which touches the smaller circle is_____.

17. From an external point P, tangents PA and PB are drawn to a circle with centre O. If CD is the tangent to the circle at a point E and PA = 14 cm. The perimeter of ΔPCD is_____

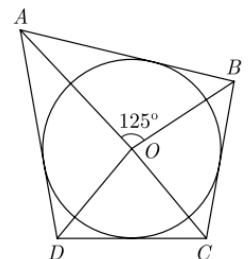
18. In the adjoining figure, TP and TQ are tangents drawn to a circle with centre O. If $\angle OPQ = 15^\circ$ and $\angle PTQ = \theta$, then find the value of $\sin 2\theta$.



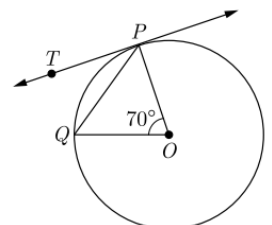
19. In the given figure, PB is a tangent to the circle with center O at B. AB is a chord of the circle of length 24cm and at a distance of 5cm from the centre of the circle. If the length PB of the tangent is 20cm, find the length of OP.



20. In the given figure , if $\angle AOB = 125^\circ$, then $\angle COD =$ _____



21. In the given figure, O is the centre of the circle, PQ is a chord and PT is tangent to the circle at P. find $\angle TPQ$.



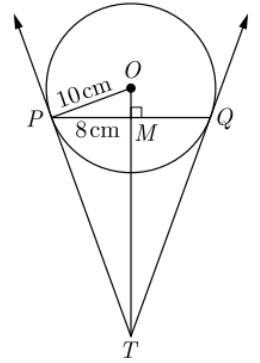
22. Prove that opposite sides of a quadrilateral circumscribing a circle subtend supplementary angles at the centre of the circle.

23. In figure, PQ, is a chord of length 16 cm, of a circle of radius 10 cm. The tangents at P and Q intersect at

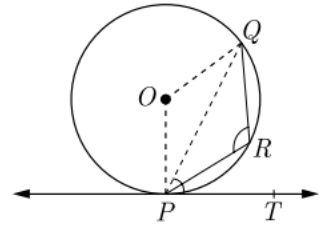


INDIAN SCHOOL NIZWA - WORKSHEET

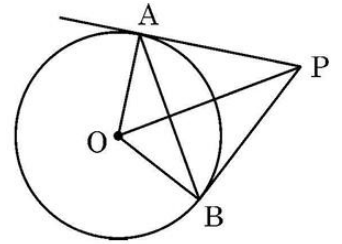
a point T . Find the length of TP.



24. In the given figure, PQ is a chord of a circle and PT is a tangent. If $\angle QPT = 60^\circ$, find $\angle PRQ$.



25. Prove that the parallelogram circumscribing a circle is a rhombus.
PA and PB are tangents drawn to a circle with centre O. If $\angle AOB = 120^\circ$ and $OA = 10\text{cm}$, then
- Find $\angle OPA$.
 - Find the perimeter of $\triangle OAP$.
 - Find the length of chord AB.



26. The given figure shows a circle with centre O and radius 4cm circumscribed by $\triangle ABC$. BC touches the circle at D such that $BD = 6\text{cm}$, $DC = 10\text{cm}$. Find the length of AE.

