PRERNA EDUCATION

IIT/ MEDICAL/ FOUNDATION

SAMPLE QUESTIONS

CIRCLES

Q.No. 1 In fig 1, PA and PB are tangents to the circle with centre O such that $\angle APB = 50°$. Write the measure of $\angle OAB$.

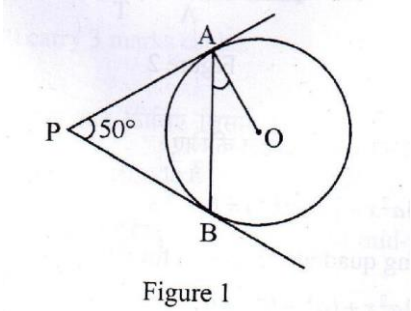
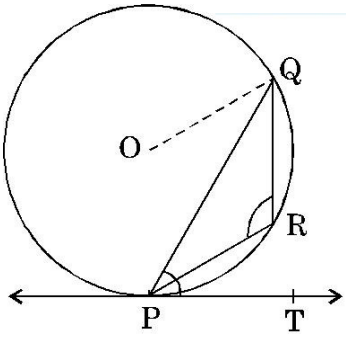


Figure 1

(a) 25° (b) 65° (c) 90° (d) 35°

Ans. (a)

Q.No. 2 If figure, PQ is a chord of a circle ∠QPT = 60°, find ∠ PRQ



(a) 110° (b) 120° (c) 130° (d) 140°

Ans. (b)

Q.No. 3 Two concentric circles of radi a and b (a>b) are given . Find the length of the chord of the larger circle which touches the smaller circle.

(a) $2\sqrt{b^2 - a^2}$ (b) $2\sqrt{a^2 - b^2}$ (c) Can't be determine (d) None of these

Ans. (b)

Q.No. 4 If the Fig 2 AB is the diameter of a circle with centre O and AT is a tangent. If find $\angle AOQ = 58°$, find $\angle ATQ$.

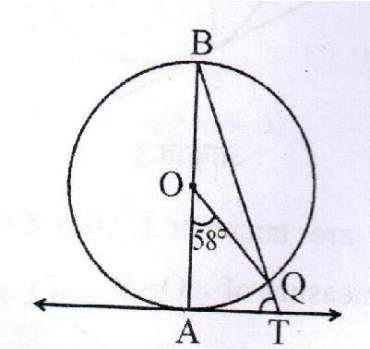
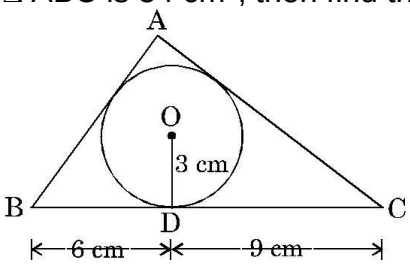


Figure 2

(a) 71° (b) 81° (c) 61° (d) 51°

Ans. (c)

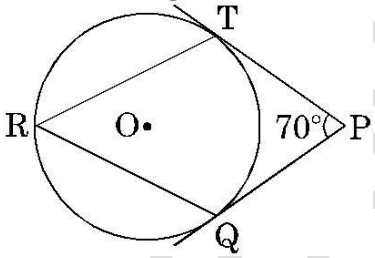
Q.No. 5 In Figure , a triangle ABC is drawn to circumscribe a circle of radius 3 cm, such that the segments BD and DC are respectively of lengths 6 cm and 9 cm. If the area of Δ ABC is 54 cm^2, then find the lengths of sides AB and AC.



(a)AB= 12cm & AC= 9cm (b)AB= 9cm & AC= 12cm
(c)AB= 6cm & AC= 5cm (d) None

Ans. (b)

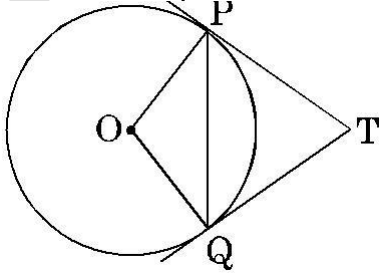
Q.No. 6 In figure, 0 is the center of a circle from an external point P. If $\angle$ TPQ =70°, find $\angle$TRQ



(a) 55° (b) 65° (c) 50° (d)None

Ans. (a)

Q.No. 7 In figure , PQ is a chord of length 8 cm of a circle of radius 5 cm. The tangents at P and Q intersect at a point T. Find the lengths of TP and TQ.



(a) $\frac{10}{3}cm$ (b) $\frac{16}{3}cm$ (c) $\frac{19}{3}cm$ (d)None

Ans. (d)

Q.No. 8 The tangent at a point C of a circle and a diameter AB when extended intersect at P. If $\angle$ PCA = 100 °, then find $\angle$CBA.

(a) 70° (b) 75° (c) 80° (d) None

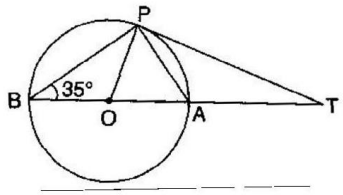
Ans. (c)

Q.No. 9 Find the radius of the circle whose circumference is equal to the sum of circumferences of the two circles of diameter 30 cm and 24 cm.

(a) 27cm (b)26cm (c) 25cm (d) 24 cm

Ans. (a)

Q.No. 10 In figure, BOA is a diameter of the circle and the tangent at a point P meets BA extended at T. If $\angle$ PBO = 35°, then find $\angle$ PTA.



(a) 30° (b) 55° (c) 20° (d) None

Ans. (c)

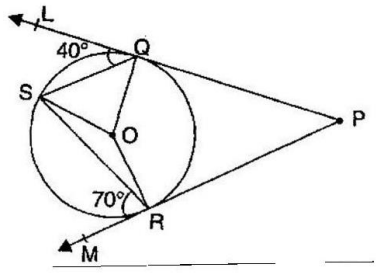
Q.No. 11 The radii of two circles are 3 cm and 4 cm. Find the radius of the circle whose area is equal to the sum of areas of two circles.

(a)r = 7cm (b) r = 5cm (c)r = 6 cm (d)r = 1 cm

Ans. (b)

Q.No. 12 In figure PQL and PRM are tangents to the circle with center O at the points P and R respectively and S is a point on the circle such that $\angle$ SQL = 40° and $\angle$ SRM = 70°.

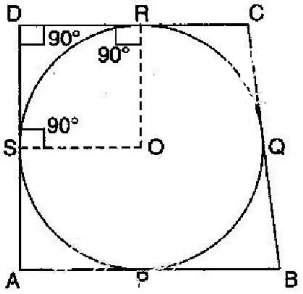
Then find $\angle$ QSR.



(a) 70° (b) 80° (c) 50° (d) 20°

Ans. (a)

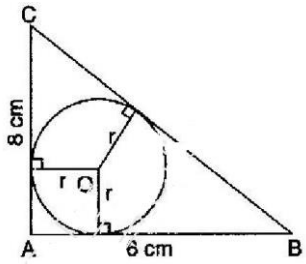
Q.No. 13 ABCD is a quadrilateral such that $\angle$ D = 90 . A circle C (O, r) touches the sides AB, BC, CD and DA at P, Q, R and S respectively. If BC = 38 cm, CD = 25 cm and BP = 27 cm, then find r.



(a)12cm (b)7cm (c)13 cm (d) None

Ans. (d)

Q.No. 14 In figure, ABC is a right angled triangle with AB = 6 cm and AC = 8 cm. A circle with centre O has been inscribed inside the triangle. Calculate the value of r, the radius of the inscribed circle.



(a)r = 3 cm (b)r = 2cm (c) r = 4cm (d) None

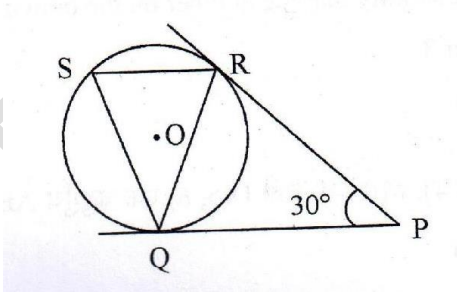
Ans. (b)

Q.No. 15 A Point P is 13 cm from the center of the circle. The length of the tangent drawn from P to the circle is 12 cm. Find the radius of the circle.

(a)5cm (b)6cm (c) 7cm (d)8cm

Ans. (a)

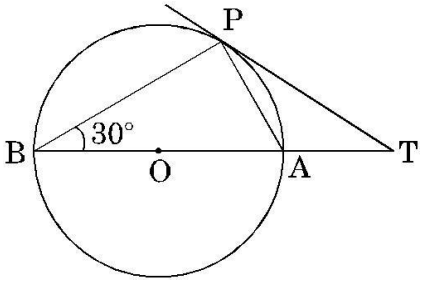
Q.No. 16 In Fig tangent PQ and PR are drawn from an external point P to a circle with centre O, such the $\angle RPQ = 30°$. A chord RS is drawn parallel to the tangent PQ. Find $\angle RQS$.



(a) 30° (b) 45° (c) 50° (d) 75°

Ans. (a)

Q.No. 17 In figure, O is the centre of the circle and TP is the tangent to the circle from an external Point T. If <PBT = $30°$, Find BA:AT



(a) 3:1 (b)2:1 (c)1:2 (d)None

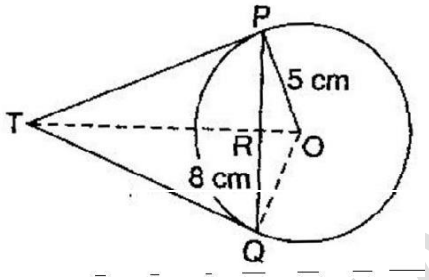
Ans. (b)

Q.No. 18 The radius of the incircle of a triangle is 4 cm and the segments into which one side is divided by the point of contact are 6 cm and 8 cm. Determine the other two sides of the triangle.

(a) 13cm, 16cm (b) 14cm, 15cm (c)13cm, 15cm (d) None

Ans. (a)

Q.No. 19 PQ is a chord of length 8 cm of a circle of radius 5 cm. The tangents at P and Q intersect at a point T. Find the length of TP.



(a) TP = 6.67cm (b)TP = 5cm (c) 7.33cm (d) None

Ans. (a)