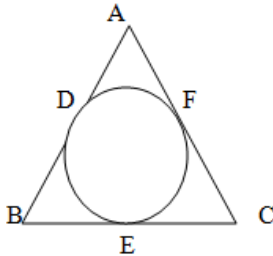


Class: X  
Subject: Math's  
Topic: Circles  
No. of Questions: 20

Q.1 Find the length of the given tangent drawn from a point whose distance from the centre of a circle is 25 cm. Given that the radius of the circle is 7 cm.

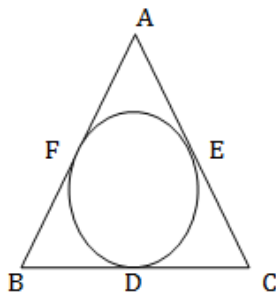
Q.2 In the given figure, if  $AB=AC$ , prove that  $BE=EC$ . (CBSE-2012)



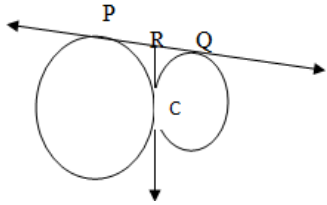
Q.3 A circle is touching the side BC of  $\Delta ABC$  at P and touching AB and AC produced at Q and R respectively. Prove that  $AQ = \frac{1}{2}$  (Perimeter of  $\Delta ABC$ ).

(CBSE-2002)

Q.4 In the figure, the incircle of  $\Delta ABC$  touches the sides BC, CA and AB at D, E and F respectively. Show that  $AF + BD + CE = AE + BF + CD = \frac{1}{2}$ (Perimeter of  $\Delta ABC$ )

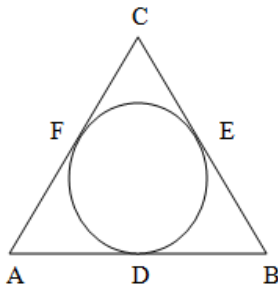


- Q.5 In the given figure, two circles touch each other at point. Prove that the common tangent to the circles at C, bisects the common tangent at P and Q. (CBSE-2013)



- Q.6 A circle touches all the four sides of a quadrilateral ABCD. Prove that  $AB + CD = BC + DA$ . (CBSE-2012)

- Q.7 A circle is inscribed in  $\triangle ABC$  having 8 cm, 10 cm and 12 cm as shown in figure. Find AD, BE and CF. (CBSE-2001)

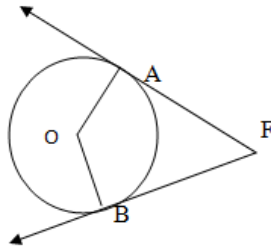


- Q.8 From an external point P, two tangents PA and PB are drawn to the circle with centre O. Prove that OP is the perpendicular bisector of AB.

- Q.9 A circle touches the sides of a quadrilateral ABCD at P, Q, R and S respectively. Show that the angles subtended at the centre by a pair of opposite sides are supplementary. (CBSE-2012)

- Q.10 O is the centre of a circle of radius 5 cm. T is a point such that  $OT = 13$  cm and OT intersects the circle at E. If AB is the tangent to the circle at E, find the length of AB.

- Q.11 If an isosceles triangle ABC in which  $AB=AC=6$  cm is inscribed in a circle of radius 9 cm, find the area of the triangle.
- Q.13 In concentric circles, prove that all the chords of the outer circle which touch the inner are of equal length.
- Q.14 Find the locus of the centres of circles which touch a given line at a given point.
- Q.15 In the given figure, O is the centre of the circle. PA and PB are tangent segments. Show that the quadrilateral AOBP is cyclic.



- Q.16 In two concentric circles, a chord of length 24 cm of larger circle becomes a tangent to the smaller circle whose radius is 5 cm. Find the radius of the larger circle.
- Q.17 In two concentric circles, prove that a chord of larger circle which is tangent to smaller circle is bisected at the point of contact.  
(CBSE-2012)
- Q.18 Two tangents TP and TQ are drawn to a circle with centre O from an external point T. Prove that  $\angle PTQ=2\angle OPQ$ .  
(CBSE-2009)

Q.19 If all the sides of a parallelogram touch the circle, show that the parallelogram is a rhombus.

(CBSE-2013)

Q.20 In the given figure, the sides AB, BC and CA of triangle ABC touch the circle with centre O and radius P, Q and R respectively. Prove that  $\text{Area}(\Delta ABC) = \frac{1}{2}(\text{perimeter of } \Delta ABC) \times r$

