Maths Work Sheet

Class - X *Chapter:- Circles*

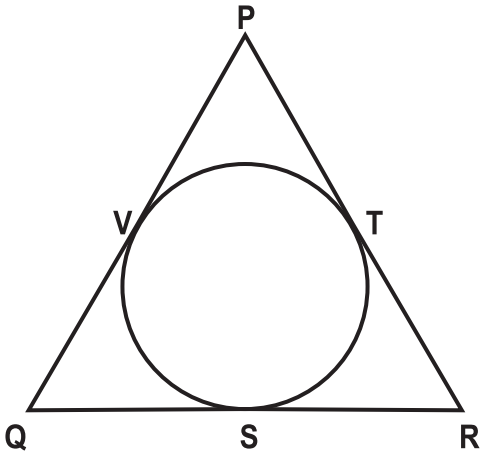
Q01 :} **The length of a tangent from a point P at a distance 5 cm from the centre of the circle is 4 cm. Find the radius of the circle.**

Q02 :} **Prove that, in two concentric circles, the chord of the larger circle which touches the smaller circle, is bisected at the point of contact.**

Q03 :} **Prove that the angle between the two tangents drawn from an external point to a circle is supplementary to the angle subtended by the line segment joining the points of contact at the centre.**

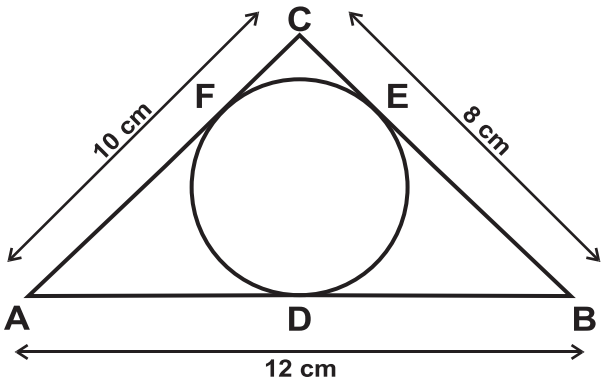
Q04 :} **A circle touches all the four sides of a quadrilateral ABCD whose side AB = 6 cm, BC = 7 cm and CD = 4 cm. Find AD.**

Q05 :} **In the given fig., if PQ = PR, prove that QS = RS.**

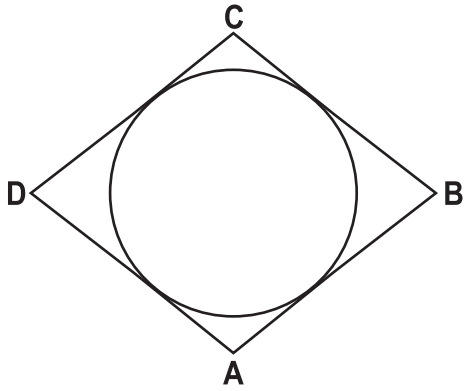


Q06 :} **Two circles touches externally at a point P and from a point T on the common tangent at P, tangent segment TQ and TR are drawn to the two circles. Prove that TQ = TR.**

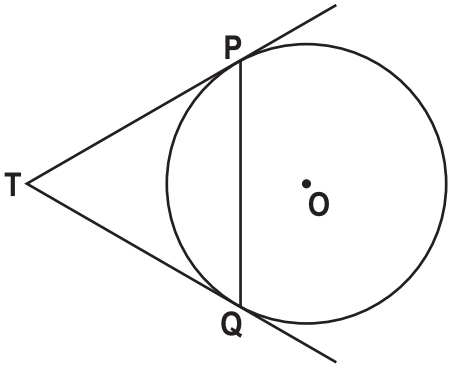
Q07 :} **A circle is inscribed in ∆ABC having sides 8 cm, 10 cm and 12 cm as shown in fig. Find AD, BE and CF.**



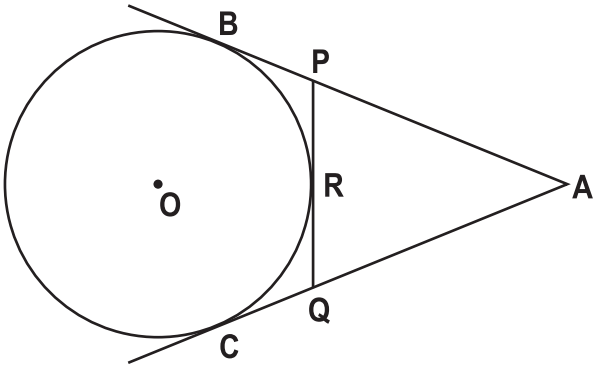
Q08 :} **In the fig., a circle touches all the four sides of a quadrilateral ABCD whose sides AB = 8 cm, BC = 9 cm and CD = 6 cm. Find AD.**



Q09 :} **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 TP.**

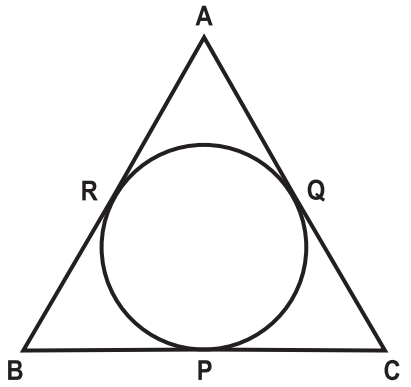


Q10 :} **The length of tangents drawn from an external point to circle are equal. Prove it. Use the result to solve the following: In the fig., AB and AC are two tangents to a circle with centre O from a point A outside the circle. Prove that PRQ is a tangent to circle at R. AP + PR = AQ + QR.**

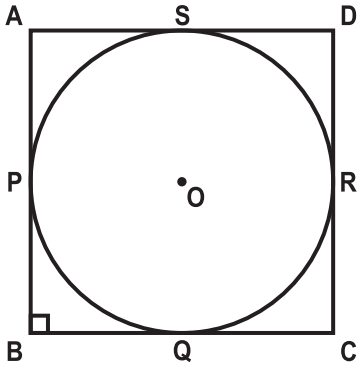


Q11 :} **Prove that the lengths of tangents drawn from an external point to a circle are equal. Using the above, prove the following: ABC is an isosceles triangle in which AB = AC, circumscribed about a circle, as shown in the fig. Prove that the base is bisected by the point of contact.**

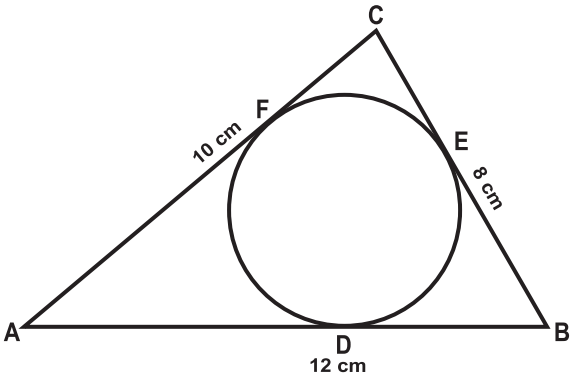
Fig.:-



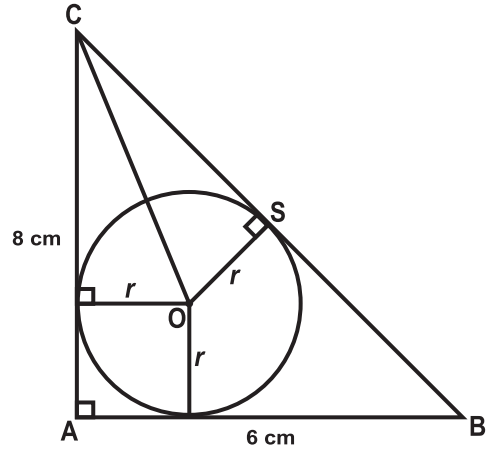
Q12 :} **In the fig., a circle is inscribed in a quadrilateral ABCD in which ∠B = 90°. If AD = 23 cm, AB = 29 cm and DS = 5 cm, find the radius (r) of the circle.**



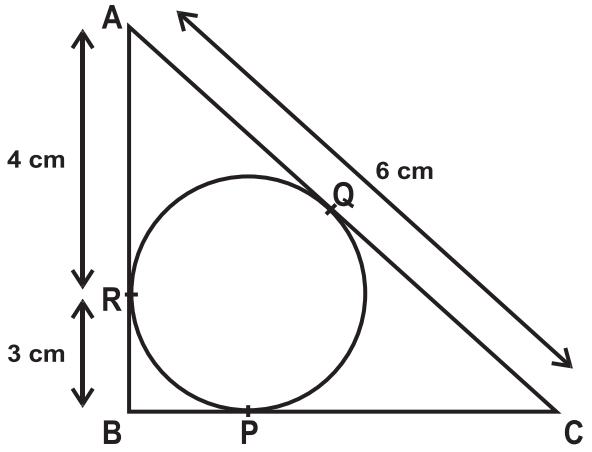
Q13 :} **A circle is inscribed in a △ABC having sides 8 cm, 10 cm and 12 cm as shown in fig. Find AD, BE and CF.**



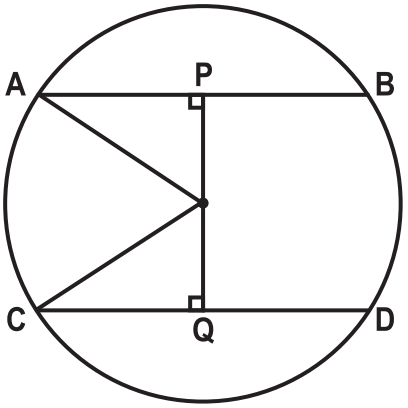
Q14 :} **In the given fig., ABC is a right-angled triangle, right angled at A, with AB=6 cm and AC = 8 cm. A circle with centre O has been inscribed inside the triangle. Calculate the value of *r*, the radius of the inscribed circle.**



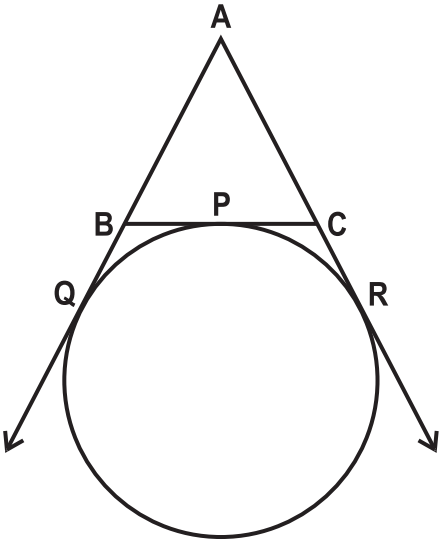
Q15 :} **In fig., ΔABC is circumscribing a circle. Find the length of BC.**



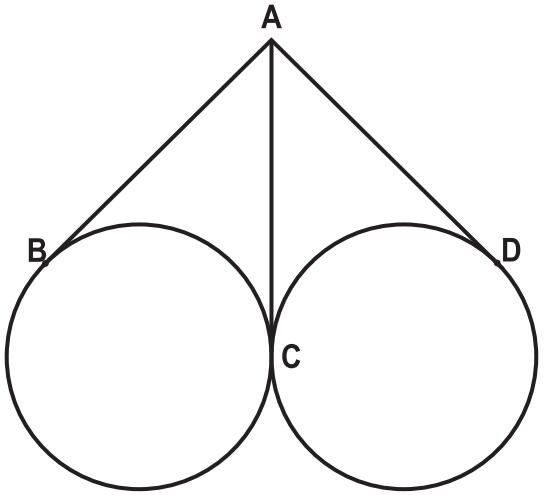
Q16 :} **In the fig., O is the centre of the circle with radius 5 cm, AB| |CD, AB = 6 cm. Find OP.**



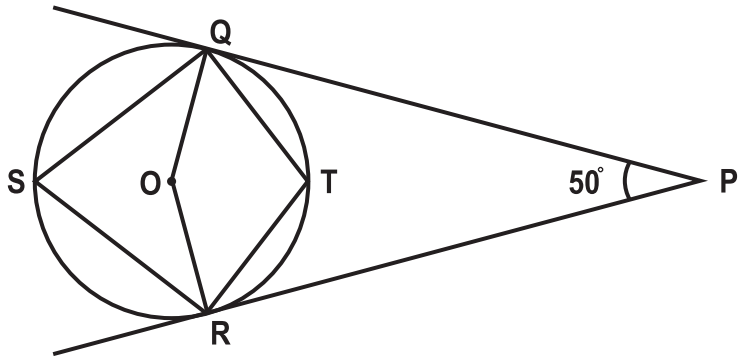
Q17 :} **In fig., a circle touches the side BC of ABC at P and touches AB and AC produced at Q and R respectively. If AQ = 5 cm, find the perimeter of ΔABC.**



Q18 :} **In the given fig., AB, AC and AD are tangents from the exterior point A to the circle which touches externally at C. If AB = 5 cm, find AD.**



Q19 :} **In the fig. given below, find ∠QSR.**



Q20 :} **△ABC is a right-angled at A. A circle is inscribed in it. The lengths of two sides containing the right angle are 12 cm and 5 cm. Find the radius of the incircle.**

Q21 :} **Prove that the intercept of a tangent between two parallel tangents to a circle subtends a right angle at the centre.**

Q22 :} **Two tangents PA and PB are drawn to the circle with centre O, such that ∠APB= 120°. Prove that OP = 2AP.**

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