

1. Sides of a triangle are 7, 24 and 25. Determine whether the triangle is right-angled triangle or not.
2. The diameter of a sphere is 6 cm. Find the total surface area of the sphere. ($\pi = 3.14$)
3. Draw a tangent at any point 'M' on the circle of radius 3.3 cm and centre 'O'.
4. Find the area of the sector of a circle of radius 8 cm and arc with length 15 cm.
5. In ΔPQR , $\angle P = 30^\circ$, $\angle Q = 60^\circ$, $\angle R = 90^\circ$ and $PQ = 12$ cm, then find PR and QR.
6. Draw the circumcircle of ΔPMT in which $PM = 5.6$ cm, $\angle P = 60^\circ$, $\angle M = 70^\circ$.
7. Prove that: $\sec^2 \theta + \operatorname{cosec}^2 \theta = \sec^2 \theta \times \operatorname{cosec}^2 \theta$.
8. Find the equation of the line passing through the points (4, -5) and (-1, -2).
9. Prove that, "The lengths of the two tangent segments to a circle drawn from an external point are equal."
10. A person standing on the bank of a river observes that the angle of elevation of the top of a tree standing on the opposite bank is 60° . When he moves 40 m away from the bank, he finds the angle of elevation to be 30° . Find the height of the tree and the width of the river. ($\sqrt{3} = 1.73$)
11. If P (-2, 4), Q(4, 8), R(10, 5) and S(4, 1) are the vertices of a quadrilateral, show that it is a parallelogram.