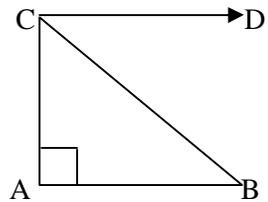
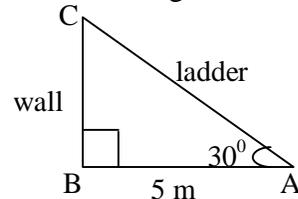




23. Find the value of  $\tan\theta + \cot\theta$  if  $\sin\theta = \cos\theta$  ( $0 < \theta < 90^\circ$ )  
 24. Write the value of  $\tan\theta$  in terms of  $\operatorname{cosec}\theta$ .  
 25. Is it right to say  $\cos(60^\circ + 30^\circ) = \cos 60^\circ \cdot \cos 30^\circ - \sin 60^\circ \cdot \sin 30^\circ$ .  
 26. Name the angle of depression from the figure given below in which  $\angle A = 90^\circ$



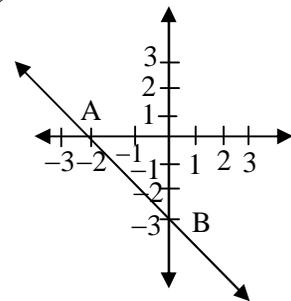
27. A tower of height 15m casts a shadow of length  $15\sqrt{3}$  m then what is the angle of elevation of the sun at that time.  
 28. The angle of elevation of sun increases from  $0^\circ$  to  $90^\circ$  then what do you notice the change in the length of shadow of the tower.  
 29. The length of a pole is equal to the shadow of the pole, then find the angle of elevation of the sun.  
 30. Observe the figure then find the length of the ladder



**II. Answer the following Questions:- (Each Questions carries 1 Mark)**

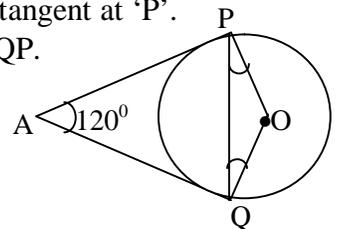
**20 × 1 = 20 M**

31. Read the following graph and answer the question given below.



Write the coordinates of the points A and B

32. Find the distance between  $(a\cos\theta, 0)$  and  $(0, a\sin\theta)$ .  
 33. Define “Trisectional points”?  
 34.  $A(0, 3)$ ,  $B(k, 0)$  and  $AB = 5$ . Find the positive value of  $k$ .  
 35. Find the coordinates of the point which divides the line segment joining the points  $(4, -3)$  and  $(8, 5)$  in the ratio 3 : 1 internally.  
 36. Find the length of the tangent to a circle of radius 7 cm at a point from a distance 25cm from the centre.  
 37. Draw a circle and two lines parallel to a given line such that one is a tangent and the other a secant to the circle  
 38. Draw a circle of radius 3 cm, mark a point ‘P’ on the circle and draw a tangent at ‘P’.  
 39. From the figure, if  $\angle PAQ = 120^\circ$  then find the measure of  $\angle POQ$ ,  $\angle OQP$ .



40. Write the formula to find i) Area of minor segment  
 ii) Area of major segment  
 41. A chord of a circle of radius 6cm is making an angle  $60^\circ$  at the centre. Find the length of the chord.  
 42. Given  $\cot\theta = \frac{7}{8}$  then evaluate  $\frac{1+\sin\theta}{\cos\theta}$   
 43. Evaluate  $\frac{\sec 34^\circ}{\operatorname{cosec} 56^\circ}$   
 44. Show that  $\tan^2\theta + \tan^4\theta = \sec^4\theta - \sec^2\theta$ .  
 45. Evaluate  $\frac{\sin 30^\circ + \tan 45^\circ - \operatorname{cosec} 60^\circ}{\cot 45^\circ + \cos 60^\circ - \sec 30^\circ}$   
 46. Draw a rough diagram of the situation given below.  
 A person is flying a kite at an angle of elevation “ $\alpha$ ” and the length of thread from his hand to kite is “ $l$ ”  
 47. If a tower of height “ $h$ ” is observed from a point with a distance “ $d$ ” and angle “ $\theta$ ”, then express the relation among  $h$ ,  $d$  and  $\theta$ .  
 48. A ladder of length  $x$  meter is leaning against a wall making angle  $\theta$  with the ground. Which trigonometric ratio would like to consider to find the height of the point on the wall at which the ladder is touching?  
 49. Prasad observed the top of a temple at an angle of elevation of  $30^\circ$ , when the observation point is 18m away from the foot of the temple. Find the height of the temple.  
 50. A boat has to cross a river. It crosses the river by making an angle of  $60^\circ$  with the bank of the river due to stream of the river and travels a distance of 600m to reach the another side of the river.  
 What is the width of the river?