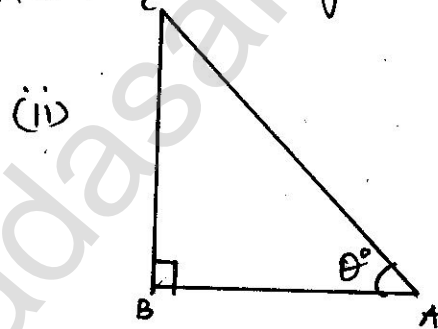
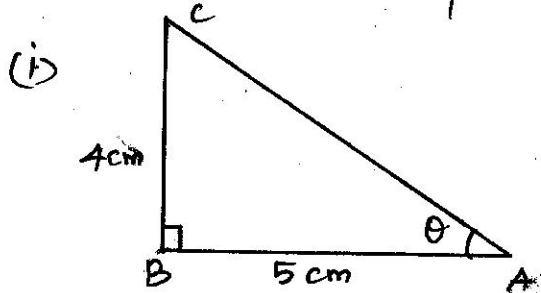


Unit - 6 - TRIGONOMETRY

2 marks:-

1. Prove that $\sqrt{\frac{1+\cos\theta}{1-\cos\theta}} = \operatorname{cosec}\theta + \cot\theta$
2. Prove that $\tan^2\theta - \sin^2\theta = \tan^2\theta \sin^2\theta$
3. Prove that $\frac{\sec\theta}{\sin\theta} - \frac{\sin\theta}{\cos\theta} = \cot\theta$
4. Prove that $\frac{\sin A}{1+\cos A} = \frac{1-\cos A}{\sin A}$
5. Prove that $1 + \frac{\cot^2\theta}{1+\operatorname{cosec}\theta} = \operatorname{cosec}\theta$
6. Prove that $\sec\theta - \cos\theta = \tan\theta \sin\theta$
7. Find the value of $\angle BAC$ in the given triangle.



8. Prove that $\frac{\cos\theta}{1+\sin\theta} = \sec\theta - \tan\theta$
9. A kite is flying at a height of 75 m above the ground. The string attached to the kite is temporarily tied to a point on the ground.
10. Prove that $\sqrt{\frac{1+\sin\theta}{1-\sin\theta}} = \sec\theta + \tan\theta$

Trigonometry:-

5 marks:

1. From the top of the tower 60m high the angles of depression of the top and bottom of a vertical lamp post are observed to be 38° and 60° respectively. Find the height of the lamp post.
($\tan 38^\circ = 0.7813$, $\sqrt{3} = 1.732$).
2. From the top of a tower 50m high, the angles of depression of the top and bottom of a tree are observed to be 30° & 45° respectively. Find the height of the tree. ($\sqrt{3} = 1.732$).
3. A tower stands vertically on the ground. From a point on the ground which is 48m away from the foot of the tower, the angle of elevation of the top of the tower is 30° . Find the length of the tower.



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