

## Chapter 8 – Introduction to Trigonometry

MM 20

Class X

Time 45 minutes

### 1 Mark Each

1. The value of the ratios of an angle do not vary with the lengths of the sides of  $\Delta$ , if angle remains same
2. If  $\tan \theta = \frac{4}{3}$ . Find  $\sin \theta$
3. Find A if  $\sin 3A = \cos (2A - 25)$
4. Express  $\sin \theta$  in terms of  $\tan \theta$
5. Maximum value of  $\sin \theta$  is \_\_\_\_\_

### 2 Marks Each

6. In right  $\Delta ABC$ , angle  $B = 90^\circ$   $AB + AC = 25\text{cm}$  and  $BC = 5\text{cm}$   
Find  $\sin A + \cos C$
7.  $ABC$  is right triangle at  $C$  and  $D$  is midpoint of  $BC$ . If angle  $ABC = \theta$  and angle  $ADC = \psi$ . Show that  $\frac{\tan \theta}{\tan \psi} = \frac{1}{2}$
8. Show  $\tan 1^\circ \cdot \tan 2^\circ \cdot \tan 3^\circ \dots \tan 88^\circ \cdot \tan 89^\circ = 1$

### 3 Marks Each

7. Prove  $\frac{\sin \theta - \cos \theta + 1}{\sin \theta + \cos \theta - 1} = \frac{1}{\sec \theta - \tan \theta}$
8. Prove  $\frac{\tan \theta}{1 - \cot \theta} + \frac{\cot \theta}{1 - \tan \theta} = 1 + \sec \theta \cdot \operatorname{cosec} \theta$
9. Prove  $\frac{1}{\sec A - \tan A} - \frac{1}{\cos A} = \frac{1}{\cos A} - \frac{1}{\sec A + \tan A}$

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