

Introduction to Trigonometry : Worksheet -10

1. Prove that

$$(i) \quad \frac{\tan \theta}{1 - \cot \theta} + \frac{\cot \theta}{1 - \tan \theta} = 1 + \sec \theta \cdot \operatorname{cosec} \theta$$

[**Hint** : Write the expression in terms of $\sin \theta$ and $\cos \theta$]

$$(ii) \quad \frac{\cos \theta - \sin \theta + 1}{\cos \theta + \sin \theta - 1} = \operatorname{cosec} \theta + \cot \theta$$



$$(iii) \sqrt{\frac{1+\sin A}{1-\sin A}} = \sec A + \tan A$$

$$(iv) \frac{\cos A}{1+\sin A} + \frac{1+\sin A}{\cos A} = 2\sec A$$

