

Activity Worksheet

Challenging brain

Sub : Mathematics

Grade: X

Date:

Name:

ID No.....

Assignment

3. Prove the following:

$$(i) (\sin^2 \theta - \cos^2 \theta + 1) \operatorname{cosec}^2 \theta = 2$$

$$(ii) 1 + \frac{\cos 2\alpha}{1 + \operatorname{cosec} \alpha} = \operatorname{cosec} \alpha$$

$$(iii) (\sin \alpha + \cos \alpha)(\tan \alpha + \cot \alpha) = \sec \alpha + \operatorname{cosec} \alpha$$

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

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

$$(vi) (\sin A + \operatorname{cosec} A)^2 + (\cos A + \sec A)^2 = 7 + \tan^2 A + \cot^2 A$$

Sol. (i) _____

(ii) _____

(iii) _____

(iv) _____

(v) _____

(vi) _____
