

MATHEMATICS ASSIGNMENT (FA-2)

CLASS X

SESSION 2012-13

- Q.1 Prove that : $\frac{\sec\theta + \tan\theta - 1}{\tan\theta - \sec\theta + 1} = \frac{\cos\theta}{1 - \sin\theta}$
- Q.2 If $\sin\theta + \sin^2\theta = 1$, then prove that $\cos^2\theta + \cos^4\theta = 1$
- Q.3 If $7\sin^2\theta + 3\cos^2\theta = 4$, show that $\tan\theta = \frac{1}{\sqrt{3}}$, $0^\circ \leq \theta \leq 90^\circ$
- Q.4 Prove that : $\frac{\sec\theta - 1}{\sec\theta + 1} + \frac{\sec\theta + 1}{\sec\theta - 1} = 2\operatorname{cosec}\theta$
- Q.5 $\sqrt{\sec^2\theta + \operatorname{cosec}^2\theta} = \tan\theta + \cot\theta$
- Q.6 $\frac{\cos A}{1 - \tan A} + \frac{\sin A}{1 - \cot A} = \cos A + \sin A$
- Q.7 $\frac{1 + \cot\theta + \tan\theta}{\sec^3\theta - \operatorname{cosec}^3\theta} \frac{(\sin\theta - \cos\theta)}{\sin\theta - \cos\theta} = \sin^2\theta \cos^2\theta$
- Q.8 If $\cos\theta + \sin\theta = \sqrt{2}\cos\theta$, show that $\cos\theta - \sin\theta = \sqrt{2}\sin\theta$
- Q.9 If $x = a \sec\theta + b \tan\theta$
 $y = a \tan\theta + b \sec\theta$
Prove that $x^2 - y^2 = a^2 - b^2$
- Q.10 $(\sin\theta + \sec\theta)^2 + (\cos\theta + \operatorname{cosec}\theta)^2 = (1 + \sec\theta \operatorname{cosec}\theta)^2$