

SUB - MATHEMATICS

WORKSHEET - 2

CLASS - X.

- 1) If $\cos \theta = \frac{x}{\sqrt{x^2 + y^2}}$ then show that $x \sin \theta = y \cos \theta$.
- 2) Evaluate: $\cos^2 30^\circ - 2 \cos^2 60^\circ - 4 \sin^2 30^\circ - \frac{3}{4} \sec^2 45^\circ + \tan 45^\circ$.
- 3) If $\sec^2 \theta + \tan^2 \theta = \frac{13}{12}$ then find the value of $(\sec \theta - \tan \theta)$.
- 4) If $\tan \theta = \frac{a}{b}$ then $\frac{b \cos \theta - a \sin \theta}{b \cos \theta + a \sin \theta} = ?$
- 5) Prove that: $\frac{2 \tan^2 30^\circ}{1 - \tan^2 30^\circ} + \sec^2 45^\circ - \cot^2 45^\circ = \sec 60^\circ$
- 6) Show that: $\operatorname{cosec}^2 25^\circ \cdot \cot^2 65^\circ = \sin^2 25^\circ + \sin^2 65^\circ + \cot^2 65^\circ$
- 7) If $\sin \theta = \cos \theta$ then value of $\sin 2\theta$ is
a) 0 b) $\frac{1}{\sqrt{2}}$ c) $\frac{\sqrt{3}}{2}$ d) 1.
- 8) If α and β are complementary angles to each other then show that: —
 $(1 - \sin^2 \alpha)(1 - \cos^2 \alpha)(1 + \cot^2 \beta)(1 + \tan^2 \beta) = 1$.