



Wada Nirmiti Education Society's
GURUKUL GLOBAL SCHOOL
WORKSHEET

SUB: Maths

LESSON: 8 – INTRODUCTION TO TRIGONOMETRY

STD: X

NAME: _____ ROLL No: _____

DATE: _____

1. If $\sin A = \frac{9}{41}$, compute $\cos A$ and $\tan A$.
2. If $\sec \theta = \frac{13}{5}$, find the value of $\frac{2\sin\theta - 3\cos\theta}{4\sin\theta - 9\cos\theta}$.
3. Find the value of x , $2\sin 3x = \sqrt{3}$.
4. Find: $4(\sin^4 30^\circ + \cos^2 60^\circ) - 3(\cos^2 45^\circ - \sin^2 90^\circ) - \sin^2 60^\circ$.
5. If $\tan A + \cot A = 6$ then find the value of $\tan^2 A + \cot^2 A - 4$
6. If A and B are acute angles such that $\sin(A - B) = 0$ and $2\cos(A + B) - 1 = 0$ then find angles A and B .
7. Prove the following identities:
 - i. $\operatorname{cosec}^2\theta + \sec^2\theta = \operatorname{cosec}^2\theta \sec^2\theta$
 - ii. $\frac{\cos\theta}{1-\sin\theta} = \frac{1+\sin\theta}{\cos\theta}$
 - iii. $(\sin\theta + \operatorname{cosec}\theta)^2 + (\cos\theta + \sec\theta)^2 = 7 + \tan^2\theta + \cot^2\theta$
 - iv. $(1 + \cot\theta - \operatorname{cosec}\theta)(1 + \tan\theta + \sec\theta) = 2$
 - v. $\frac{\tan\theta + \sec\theta - 1}{\tan\theta - \sec\theta + 1} = (1 + \sin\theta) = \frac{1 + \sin\theta}{\cos\theta}$
 - vi. $(\sec^2\theta - 1)(\operatorname{cosec}^2\theta - 1) = 1$
 - vii. $\tan^2 A + \cot^2 A = \sec^2 A \operatorname{cosec}^2 A - 2$
 - viii. $\tan^2\theta - \sin^2\theta = \tan^2\theta \sin^2\theta$
8. If $\operatorname{cosec}\theta = \sqrt{2}$ then find the value $\frac{(2\sin\theta + 3\cot\theta)}{4(\tan\theta - \cos\theta)}$
9. Find the value of: $\operatorname{cosec}^3 30^\circ \cos 60^\circ \tan^3 45^\circ \sin^2 90^\circ \sec^2 45^\circ \cot 30^\circ$
10. If $\tan\theta = a/b$, find the value of $(\cos\theta + \sin\theta) / (\cos\theta - \sin\theta)$