INDIAN SCHOOL NIZWA
MATHEMATICS WORKSHEET-3
CH-8 TRIGONOMETRY

DATE: MAY CLASS :X

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1. If $\sin\theta = \frac{a}{\sqrt{a^2+b^2}}$ $0< \theta <90^o$ Find the values of $\cos\theta$ and $\tan\theta$

2. If tan 2A= cot (A-18), 2A an acute angle, then Find the value of A

3. Prove $\frac{tan^3\theta}{1+tan^2\theta} + \frac{cot^3\theta}{1+cot^2\theta} = sec\theta.cosec\,\theta - 2\sin\theta.\cos\theta$

4. Evaluate $\sin^2 24^0 + \cos^2 66^0$

5. Prove That $(\sin x + \cos x)^2 = 1 + 2\sin x.\cos x$

6. Given $\sin^2 x + \cos^2 x = 1$, prove that $1 + \cot^2 x = \text{cosec}^2 x$

7. Rewrite each of the following as the sin or cos of a single angle and evaluate where possible.

   i. $\cos 40°\cdot\cos 50° - \sin 40°\cdot\sin 50°$

   ii. $\sin 110°\cdot\cos 10° - \cos 290°\cdot\cos 80°$

8. Prove That $\frac{\tan\theta}{1-cot\theta} + \frac{\cot\theta}{1-tan\theta} = 1 + \tan\theta + \cot\theta$

9. Prove That $tan^2\theta + \cot^2\theta + 2 = sec^2\theta.cosec^2\theta$

10. If $\frac{2\sin\theta}{1+cos\theta+sin\theta} = y$ Prove That $\frac{1-cos\theta+sin\theta}{1+sin\theta} = y$