

PRACTICE TEST: CLASS-X

TRIGONOMETRY

1. If $\tan 2A = \cot (A - 18^\circ)$, where $2A$ is an acute angle, find the value of A .

2. If $\sin 5A = \cos 4A$, where $5A$ and $4A$ are acute angles, find the value of A .

3. Evaluate the following:

(i) $(\sin 47^\circ / \cos 43^\circ)^2 + (\cos 43^\circ / \sin 47^\circ)^2 - 4\cos^2 45^\circ$

(ii) $(\sin 35^\circ / \cos 55^\circ)^2 + (\cos 55^\circ / \sin 35^\circ)^2 - 2\cos^2 60^\circ$

4. Evaluate each of the following:

(i) $\cot 12^\circ \cot 38^\circ \cot 52^\circ \cot 60^\circ \cot 78^\circ$

(ii) $\tan 5^\circ \tan 25^\circ \tan 30^\circ \tan 65^\circ \tan 85^\circ$

5. Prove the following identities:

(i) $(1 - \sin A / 1 + \sin A) = (\sec A - \tan A)^2$

(ii) $(\cos A / 1 - \sin A) + (\cos A / 1 + \sin A) = 2\sec A$

6. If $\cos A = 4/5$, find all other trigonometry ratios of angle A .

7. If $\sec A + \tan A = x$, obtain the values of $\sec A$, $\tan A$ and $\sin A$.

8. $\sec A = x + 1/(4x)$, prove that : $\sec A + \tan A = 2x$ or $1/(2x)$.

9. $(\sec A + \tan A - 1)(\sec A - \tan A + 1) = 2\tan A$

10. If $T_n = \sin^n A + \cos^n A$, prove that $(T_3 - T_5)/T_1 = (T_5 - T_7)/T_3$