INTERNATIONAL INDIAN SCHOOL BURAIDAH

Worksheet for the Academic Year 2023-24

CLASS: X SUBJECT: MATHEMATICS DATE: 27-05-2023

LESSON:08 - TRIGONOMETRY

Level 1

1. If $\tan\theta = 11$. Find the values of $\sin\theta$ and $\sec\theta$

   (Ans: $\frac{11}{\sqrt{122}}$, $\sqrt{122}$)

2. If $\angle A$ and $\angle P$ are acute angles such that tan A = tan P, then show that

   $\angle A = \angle P$

3. Evaluate a) $\frac{Sin\ 30°-Si\ \ 90°+2\ Cos\ 0°}{\tan 30°\tan 60°}$ (Ans: $\frac{3}{2}$)

   b) $\frac{2\tan 45° \times \cos 60°}{sin30°}$ (Ans: 2)

4. If A = 30° and B = 60°, Verify that

   a) Sin (A + B) = Sin A CosB + CosA SinB

   b) Cos (A + B) = Cos A Cos B $-$SinA SinB

5. If $4\ Cot^2 45 - Sec^2 60 + Sin^2 60 + p = \frac{3}{4}$, then find the value of p (Ans: 0)

6. Find the value of $cot^2\theta - \frac{1}{Sin^2\theta}$ (Ans: -1)

7. If $4\tan\theta = 3$, Evaluate $\frac{4\ Sin\theta - Cos\ \theta + 1}{4Sin\ \theta + Cos\ \theta - 1}$ (Ans: $\frac{13}{11}$)

Level 2

8. If $Sec\ \theta + tan\ \theta$ = p, then $\tan\theta =$ -------- (Ans: $\frac{p^2-1}{2p}$)

9. If $\sqrt{3}\ Sin\ \theta = Cos\ \theta$,Find the value of $\frac{3\cos^2\theta + 2\cos\theta}{3\cos\theta + 2}$ (Ans: $\frac{\sqrt{3}}{2}$)

10. If $Cos\theta + Sin\theta = \sqrt{2}Cos\ \theta$, Show that $Cos\theta - Sin\theta = \sqrt{2}Sin\theta$

11. Prove that $\frac{(1+\cot\theta + tan\ \ )(\ Sin\theta - Cos\theta\ )}{Sec^3\theta - Cosec^3\theta} = Sin^2\ \theta\ Cos^2\ \theta$

12.Prove that $\left(\frac{1}{Cos\theta} - \text{Cos}\ \theta\right)\left(\frac{1}{Sin} - \text{Sin}\theta\right) = \frac{1}{tan\theta + cot}$

13. $1 + \sin^2\theta = 3\ \text{Sin}\ \theta\ \text{Cos}\ \theta$, Prove that $\tan\theta = 1\ or\ \frac{1}{2}$

14. If $\tan\theta + \frac{1}{tan} = 2$ Find the values of $\left(\tan^2\theta + \frac{1}{tan^2\theta}\right)$ (Ans: 2)

15.Prove that $\frac{\text{Cot A+C}\qquad\text{A}-1}{\text{Cot A}-\text{Cosec A}+1} = \frac{1+\text{Cos A}}{\text{Sin A}}$

16.Prove that $\frac{Sin\ \theta}{Cot\ \theta + Cos\quad\theta} = 2 + \frac{Sin\ \theta}{Cot\ \theta - Cose\quad\theta}$

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