



MATHEMATICS

CH- 2- INVERSE TRIGONOMETRIC FUNCTIONS

Name: _____

Date: _____

Class: XII Sec: ____

1. Find the principal value of $\sec^{-1}(-2)$

2. Find the value of $\cot(\tan^{-1}a + \cot^{-1}a)$

3. Prove that $\cot^{-1} \left(\frac{\sqrt{1 + \sin x} + \sqrt{1 - \sin x}}{\sqrt{1 + \sin x} - \sqrt{1 - \sin x}} \right) = \frac{x}{2}$

4. If $y = \cot^{-1}(\sqrt{\cos x}) - \tan^{-1}(\sqrt{\cos x})$, then prove that $\sin y = \tan^2(x/2)$

5. Prove that $\tan^{-1} \left(\frac{\cos x}{1 + \sin x} \right) = \pi/4 - x/2$

6. Solve : $\tan^{-1}(x-1) + \tan^{-1}x + \tan^{-1}(x+1) = \tan^{-1} 3x$

7. Solve for x: $2\tan^{-1}(\cos x) = \tan^{-1}(2\operatorname{cosec}x)$

8. If $\tan^{-1}x + \tan^{-1}y + \tan^{-1}z = \pi/2$, then find the value of $xy+xz+yz$.

9. If $(\tan^{-1}x)^2 + (\cot^{-1}x)^2 = 5\pi^2/8$, then find x

10. Solve: $\cos(\tan^{-1}x) = \sin(\cot^{-1}3/4)$.