

Inverse Trigonometric Functions

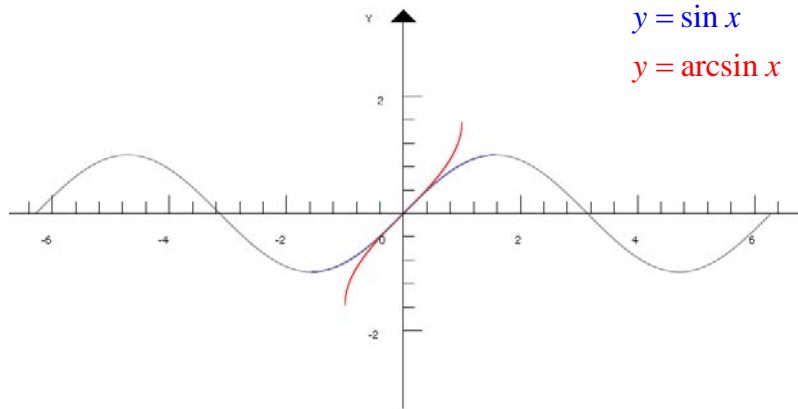
$$y = \arcsin x$$

Positive - Quadrant I

Negative - Quadrant IV

Domain: $[-1, 1]$

Range: $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$



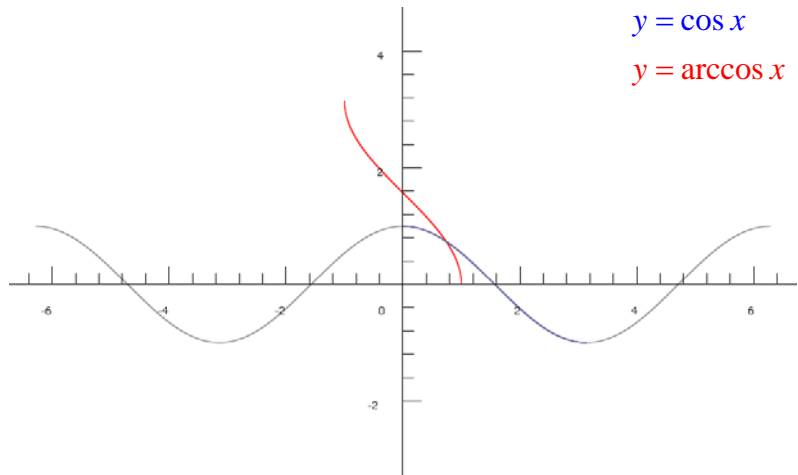
$$y = \arccos x$$

Positive - Quadrant I

Negative - Quadrant II

Domain: $[-1, 1]$

Range: $[0, \pi]$



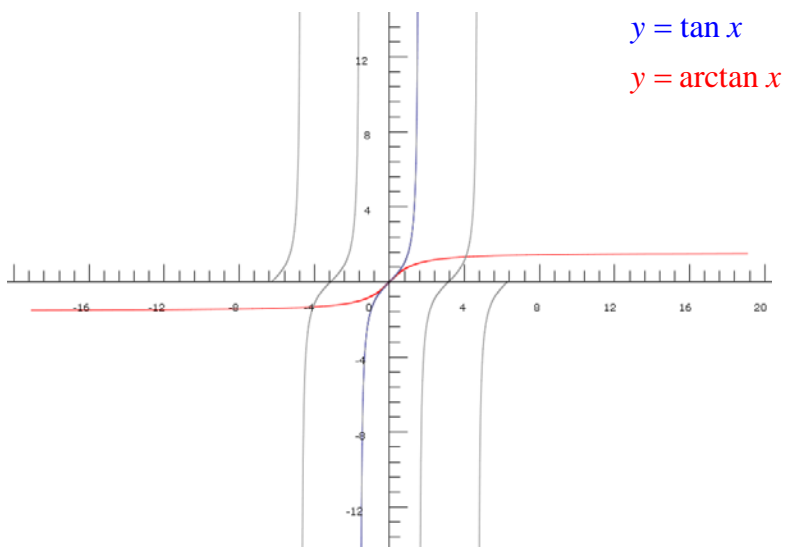
$$y = \arctan x$$

Positive - Quadrant I

Negative - Quadrant IV

$$\text{Domain: } [-\infty, \infty]$$

$$\text{Range: } \left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$$



Directions: Find the exact value of each in radians.

1. $\arccos\left(-\frac{1}{2}\right)$

2. $\arctan\left(\frac{\sqrt{3}}{3}\right)$

3. $\arccos\left(-\frac{\sqrt{2}}{2}\right)$

4. $\sin^{-1}3$

5. $\arcsin(0)$

Directions: Find the exact value of each.

6. $\tan[\arcsin(0)]$

7. $\sin[\arctan(\sqrt{3})]$

8. $\arcsin\left[\sin\frac{5\pi}{3}\right]$

9. $\tan\left[\arccos\left(\frac{1}{3}\right)\right]$

10. $\cos[\arcsin x]$