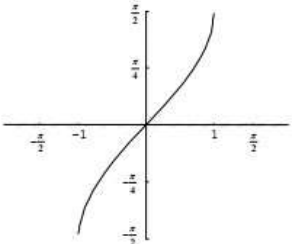
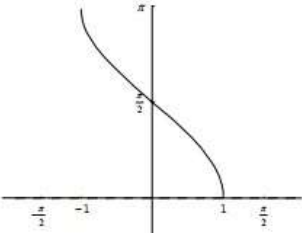
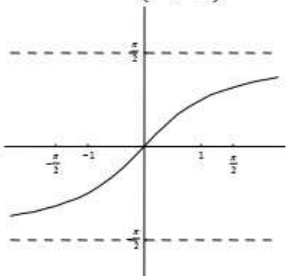
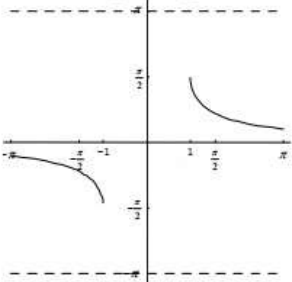
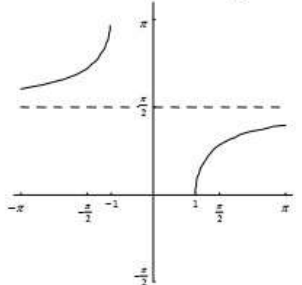
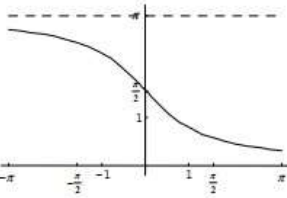


GRAPHS OF INVERSE TRIG FUNCTIONS

<p>Domain: $[-1, 1]$ Range: $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$</p>  <p>$f(x) = \sin^{-1} x$ $f(x) = \arcsin x$</p>	<p>Domain: $[-1, 1]$ Range: $[0, \pi]$</p>  <p>$f(x) = \cos^{-1} x$ $f(x) = \arccos x$</p>	<p>Domain: $(-\infty, \infty)$ Range: $\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$</p>  <p>$f(x) = \tan^{-1} x$ $f(x) = \arctan x$</p>
<p>Domain: $(-\infty, -1] \cup [1, \infty)$ Range: $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right], y \neq 0$</p>  <p>$f(x) = \csc^{-1} x$ $f(x) = \text{arc csc } x$</p>	<p>Domain: $(-\infty, -1] \cup [1, \infty)$ Range: $[0, \pi], y \neq \frac{\pi}{2}$</p>  <p>$f(x) = \sec^{-1} x$ $f(x) = \text{arcsec } x$</p>	<p>Domain: $(-\infty, \infty)$ Range: $(0, \pi)$</p>  <p>$f(x) = \cot^{-1} x$ $f(x) = \text{arccot } x$</p>

Ranges	
$[0, \pi]$	$[-\pi/2, \pi/2]$
Arccos	Arcsin
Arcsec	Arc csc
Arccot	Arctan

Inverse Trig and Circular Function Homework

Precalculus

Find the exact values of the inverse circular functions (Answers are in radians).

1. $\tan^{-1} 1$
2. $\arccos (-1)$
3. $\cot^{-1} \sqrt{3}$
4. $\cos^{-1} 0$
5. $\operatorname{arcsec} 0$
6. $\arcsin (-1)$
7. $\sin^{-1} \left(-\frac{\sqrt{2}}{2}\right)$
8. $\csc^{-1} 1$
9. $\operatorname{arccot} \left(-\frac{\sqrt{3}}{3}\right)$

Find the exact values of the inverse trigonometric functions (Answers are in degrees).

10. $\cot^{-1} 1$
11. $\cos^{-1} 1$
12. $\operatorname{arcsec} 2$
13. $\arcsin 2$
14. $\tan^{-1} \sqrt{3}$
15. $\arctan (-1)$

Use a calculator to find the values of the inverse circular functions to 3 decimal places (Set MODE to radians).

16. $\sin^{-1} 0.7753$
17. $\operatorname{arccsc} 2.647$
18. $\arctan 1.872$
19. $\cot^{-1} (-4.011)$
20. $\cos^{-1} 1.75$
21. $\operatorname{arcsec} (-4.5)$

Use a calculator to find the values of the inverse trigonometric functions to 3 decimal places (Set MODE to degrees).

22. $\arccos 0.4531$
23. $\sec^{-1} 1.233$
24. $\operatorname{arccot} 2.331$
25. $\operatorname{arccsc} 0.591$
26. $\tan^{-1} (-0.4375)$

Find the exact value of the expression

27. $\cos (\arccos 0.52)$
28. $\sin [\sin^{-1} (-0.3)]$
29. $\tan^{-1} (\tan 3\pi)$
30. $\sec (\operatorname{arcsec} 47^\circ)$
31. $\cos (\arctan \frac{4}{3})$
32. $\sec (\arcsin \frac{15}{17})$
33. $\cot [\operatorname{arccsc} \left(-\frac{13}{12}\right)]$
34. $\tan (\operatorname{arcsec} 0)$