

Name: _____

Inverse Trigonometric Functions

Exercise 1: Write an algebraic expression that is equivalent to the expression.

- | | | | |
|----|---|-----|--|
| 1) | $\cot(\arctan x)$ | 2) | $\sin(\arctan x)$ |
| 3) | $\cos(\arcsin 2x)$ | 4) | $\sec(\arctan 3x)$ |
| 5) | $\sin(\arccos x)$ | 6) | $\sec[\arcsin(x-1)]$ |
| 7) | $\tan\left(\arccos \frac{x}{3}\right)$ | 8) | $\cot\left(\arctan \frac{1}{x}\right)$ |
| 9) | $\csc\left(\arctan \frac{x}{\sqrt{2}}\right)$ | 10) | $\cos\left(\arcsin \frac{x-h}{r}\right)$ |

Exercise 2: Fill in the blank.

- 1) $\arctan \frac{9}{x} = \arcsin(\quad), x \neq 0$
- 2) $\arcsin \frac{\sqrt{36-x^2}}{6} = \arccos(\quad), 0 \leq x \leq 6$
- 3) $\arccos \frac{3}{\sqrt{x^2-2x+10}} = \arcsin(\quad)$
- 4) $\arccos \frac{x-2}{2} = \arctan(\quad), |x-2| \leq 2$

Exercise 3: Graph the function.

- i. $f(x) = 2 \arccos(2x)$
- ii. $f(x) = \pi \arcsin(4x)$
- iii. $f(x) = \arctan(2x-3)$
- iv. $f(x) = -3 + \arctan(\pi x)$
- v. $f(x) = \pi - \sin^{-1}\left(\frac{2}{3}\right)$
- vi. $f(x) = \frac{\pi}{2} + \cos^{-1} \frac{1}{\pi}$