

Assignment 8C: Inverse Trig Functions

State the range of the inverse function and find the value of the expression on that range. Support your answer by sketching a unit circle and the appropriate angle.

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

2. $\cos^{-1}\left(\frac{\sqrt{2}}{2}\right)$

3. $\tan^{-1}(-\sqrt{3})$

Find the following values. Support your answer with a reference triangle or unit circle drawing.

4. $\arctan\left(\cos\left(\frac{\pi}{3}\right)\right)$

5. $\tan\left(\sin^{-1}\left(\frac{5}{6}\right)\right)$

6. $\sin(\arctan(x))$
(State your answer in terms of x)

7. $\csc\left(\tan^{-1}\left(\frac{2}{x}\right)\right)$
(State your answer in terms of x)

8. Matt and Brad are watching a rocket that they shot vertically into the air. They measure the angle of elevation, θ , from where the rocket was launched. If the launch pad is 100ft. away from the boys, write an equation that relates θ to the shortest distance, x , from the boys to the rocket.

