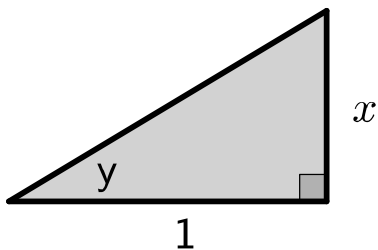


1. (a) Review \arctan and determine $\arctan(1)$.

(b) Review \arcsin and determine $\arcsin\left(-\frac{\sqrt{3}}{2}\right)$

(c) Review \arccos and determine $\arccos\left(\frac{1}{\sqrt{2}}\right)$

2. Use the triangle below to determine the following.



(a) $\tan(y)$

(b) $\cos(y)$

3. Use differentiation of trig functions and implicit differentiation to determine $\frac{d}{dx}(\arctan(x))$.

4. Use differentiation of trig functions and implicit differentiation to determine $\frac{d}{dx}(\sin^{-1}(x))$.

5. Use differentiation of trig functions and implicit differentiation to determine $\frac{d}{dx}(\arccos(x))$.

6. Differentiate the following functions.

(a) $f(x) = \arcsin(2x + 1)$

(b) $f(t) = t \arctan(t) + \ln(\tan(x))$

(c) $y = \arccos\left(\frac{t^3 + 7}{t + 12}\right)$

(d) $y = \ln(\arctan(t^2 + \sqrt{t}))$