

Assignment 3-3

Evaluate the expressions in Problems 1-4 without using a calculator.

1. $\arcsin \frac{\sqrt{3}}{2}$ 2. $\arctan(-1)$ 3. $\arccos\left(\frac{-1}{2}\right)$ 4. $\arctan \sqrt{3}$

In Problems 5 and 6, solve for x without using a calculator.

5. $\arctan(3-x) = \frac{-\pi}{4}$ 6. $\arccos(x^2 - 2) = \pi$

For Problems 7 and 8, evaluate without using a calculator. First, sketch a triangle for each problem.

7. Find $\cos y$, given that $y = \arcsin\left(\frac{-4}{5}\right)$. 8. Find $\sin x$, given that $x = \arctan(3)$.

Differentiate in Problems 9-14. Do not use a calculator.

9. $y = 2\arctan(3x)$ 10. $f(x) = \arcsin(x^2 - 1)$ 11. $g(y) = \arcsin e^{-y}$
12. $h(t) = \arctan t^{\frac{3}{2}}$ 13. $y = x^2 \arccos x$ 14. $f(\theta) = \arctan(\ln \theta)$