

Algebra and Calculus Worksheet 11

Name: _____

This worksheet draws material from the suggested problems on Homework 12, and throws in some additional questions.

Section 5.3

Q13: Graph $g(x) = -\frac{1}{2}\sin(x)$.

Q23: Find the amplitude and period of the function, and sketch its graph:

$$y = -2\cos(3\pi x)$$

Q35: $y = -2\sin\left(x - \frac{\pi}{6}\right)$. Find the amplitude, period, and horizontal shift, and then graph one period of the function.

Section 5.5

Q3: Find the exact value: $\sin^{-1}(1)$.

Q7: Find the exact value: $\tan^{-1}(-1)$.

Q35: Find the exact value, if it's defined: $\cos^{-1}\left(\cos\left(\frac{5\pi}{6}\right)\right)$

Q42: Find the exact value, if it's defined: $\sin^{-1}\left(\sin\left(\frac{11\pi}{4}\right)\right)$

Section 6.4

Q29: Find the exact value of $\cos\left(\sin^{-1}\left(\frac{4}{5}\right)\right)$.

Q35: Rewrite as an algebraic expression in x : $\tan\left(\sin^{-1}(x)\right)$.

Misc.

1. Why must we restrict the domain of $\sin(x)$ to define $\sin^{-1}(x)$? (Recall the range and domain of $\sin^{-1}(x)$).
2. The function $\tan^{-1}(x)$ has (horizontal, vertical) asymptotes at _____, while the function $\tan(x)$ has (horizontal, vertical) asymptotes at _____.