

1. Find the domain and range of each of the following functions.

(a) $f(x) = \arccos x$

(d) $f(x) = \csc^{-1} x$

(b) $f(x) = \arcsin x$

(e) $f(x) = \arctan x$

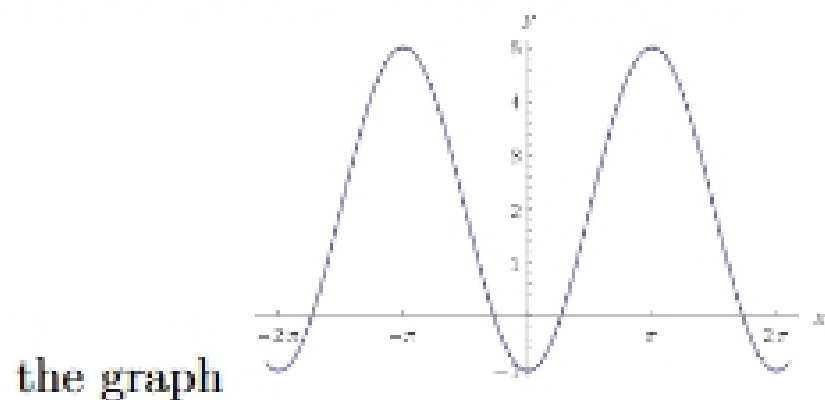
(c) $f(x) = \sec^{-1} x$

(f) $f(x) = \cot^{-1} x$

(g) $f(x) = \arcsin(4x) + \pi$

2. Give angles in radians satisfying the following properties
- An angle in the second quadrant coterminal with $\frac{2\pi}{3}$
 - A negative angle coterminal with $\frac{7\pi}{6}$
 - An angle larger than 4π that is coterminal with $\frac{-\pi}{4}$
 - An angle less than -12π that is coterminal with $\frac{-2\pi}{3}$
3. (a) Suppose a function with period 2π attains a maximum value of 100 and a minimum value of 20. If the function has the form $f(x) = A \sin x + B$ what must A and B be?
- (b) Suppose that, in addition to the above, the function satisfies the initial condition that $f(0) = 20$. Can the function still be written as $f(x) = A \sin x + B$? If not, how can you change f to satisfy this?

4. For the graph below, determine a cosine function and a sine function that produces



5. Sketch at least two periods of $f(x) = \tan(x - \frac{\pi}{4}) + 2$

6. Find the following values

(a) $\arcsin(1)$

(d) $\tan(\arcsin(-\frac{3}{4}))$

(b) $\cos(\arcsin(\frac{1}{3}))$

(e) $\cos^{-1}(\cos(\frac{3\pi}{2}))$

(c) $\sin(\arctan(\frac{5}{12}))$

(f) $\csc(\arcsin(\frac{1}{3}))$