



7-5 Additional Practice

Graphing Other Trigonometric Functions

Sketch the graph over the region -2π to 2π . Describe the domain, range, period, zeros and asymptotes of the function.

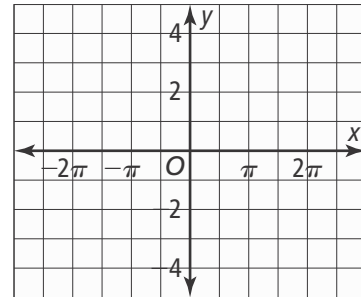
1. $y = \tan x$

Domain: _____

Range: _____

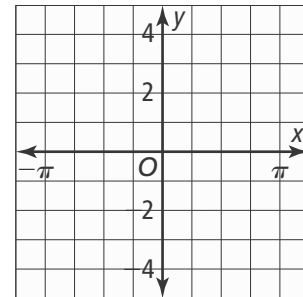
Period: _____

Asymptotes: _____

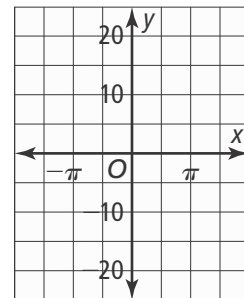


For Items 2 and 3, sketch the graphs of the functions. Then describe how the graph of each function compares to the graph of the parent function.

2. $y = \frac{1}{4} \tan 4x$



3. $y = 2 \cot 0.25x$



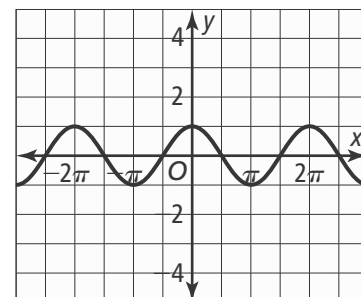
4. Benjamin is observing a hotel's entrance from a bench 30 ft away.

a. Write a function to model the height h of the hotel as a function of the angle of inclination x from his position to the entrance of the hotel.

b. Identify an appropriate domain.

5. Write a csc function that has a period of $\frac{\pi}{4}$.

6. Graph the function $y = \sec x$. Describe how the graph of $y = \sec x$ is related to the graph of $y = \cos x$.



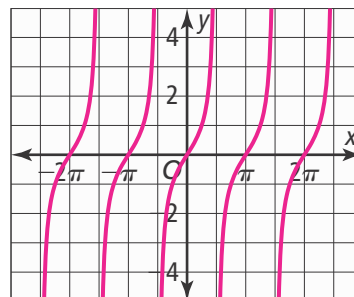


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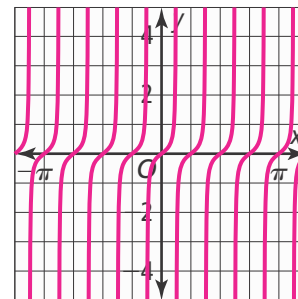
1. $y = \tan x$

Domain: $\left\{x : x \neq \frac{\pi}{2} + n\pi, \text{ where } n \text{ is an integer}\right\}$ Range: $-\infty, \infty$ Period: π Asymptotes: any multiple of $\frac{\pi}{2}$ 

For Items 2 and 3, sketch the graphs of the functions. Then describe how the graph of each function compares to the graph of the parent function.

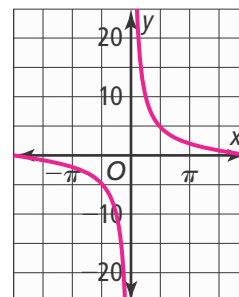
2. $y = \frac{1}{4} \tan 4x$

Vertical compression makes the graph look more bent than the parent function $y = \tan x$. Horizontal compression changes the period of the function to $\frac{\pi}{4}$.



3. $y = 2 \cot 0.25x$

Vertical stretch makes the graph look straighter than the parent function $y = \cot x$. The horizontal stretch changes the period of the function from $\frac{\pi}{2}$ to 2π .



4. Benjamin is observing a hotel's entrance from a bench 30 ft away.

a. Write a function to model the height h of the hotel as a function of the angle of inclination x from his position to the entrance of the hotel. $y = 30 \tan x$

b. Identify an appropriate domain.

Answers may vary. Sample: $-\pi < x < \pi$

5. Write a csc function that has a period of $\frac{\pi}{4}$. $y = \csc 8x$

6. Graph the function $y = \sec x$. Describe how the graph of $y = \sec x$ is related to the graph of $y = \cos x$.

$y = \sec x$ is the reciprocal of $y = \cos x$.

