

7.1: Right Triangle Trigonometry

“I WILL...

...graph trig functions.”

I. Graphing Trig Functions

A. From the Unit Circle, there are five points to graph.

1. Sine and Cosine graphs, they are $0, \frac{\pi}{2}, \pi, \frac{3\pi}{2},$ and 2π

2. Tan graphs are $0, \frac{\pi}{4}, \frac{\pi}{2}, \frac{3\pi}{4},$ and π

B. In labeling the graph, there will be five points on the x -axis to list on marks using the Quadrantals.

C. Period is of a function is the horizontal length of one complete cycle.

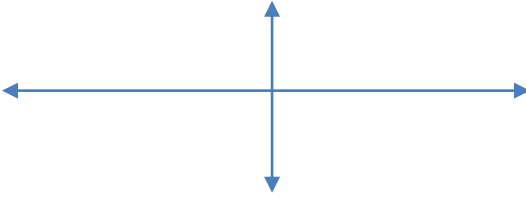
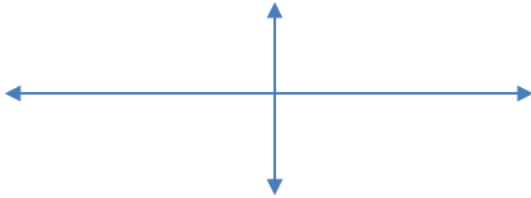
D. Cosine and Sine graphs

1. Sine graph is an odd function (reflects over the origin)

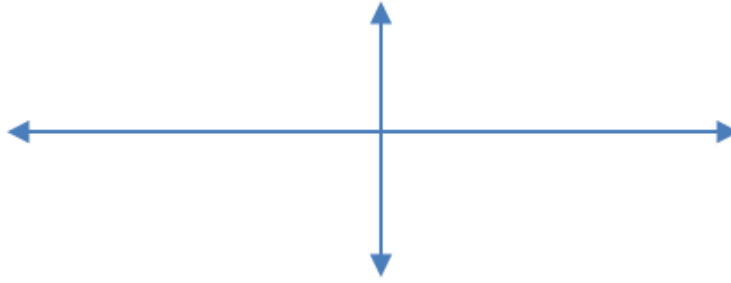
2. Cosine Graph is an even function (symmetrical of the y -axis)

E. Tan graphs

1. Tan graph is an odd function (reflects over the origin)

<p>Ex 1: Graph $y = \sin x$</p>  <p>Period: Domain: Range: Increasing: Decreasing: Zeroes: Odd or Even Function?</p>	<p>Ex 2: Graph $y = \cos x$</p>  <p>Period: Domain: Range: Increasing: Decreasing: Zeroes: Odd or Even Function?</p>
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Ex 3: Graph $y = \tan x$



Period:

Domain:

Range:

Increasing:

Decreasing:

Zeroes:

Odd or Even Function?

Ex 4: Find t for $\sin t = \frac{\sqrt{2}}{2}$ from $[0, 2\pi)$

Ex 5: Find t for $\tan t = 1$ from $[0, \pi)$

Your Turn: Find t for $\cos t = -\frac{\sqrt{3}}{2}$ from $[0, \pi)$

Assignment: Page 483, 7-19 odd

7. For what values of t on the interval $[-2\pi, 2\pi]$ is $\sin t = 1$?
8. For what values of t on the interval $[-2\pi, 2\pi]$ is $\cos t = 0$?
9. What is the maximum value of $g(t) = \cos t$?
10. What is the minimum value of $f(t) = \sin t$?

11. For what values of t on the interval $[-2\pi, 2\pi]$ does the graph of $h(t) = \tan t$ have vertical asymptotes?
12. What is the y-intercept of the graph of $f(t) = \sin t$?
13. What is the y-intercept of the graph of $g(t) = \cos t$?
14. What is the y-intercept of the graph of $h(t) = \tan t$?
15. For what values of t on the interval $[-\pi, \pi]$ is $f(t) = \sin t$ increasing?
16. For what values of t on the interval $[-3\pi, -\pi]$ is $g(t) = \cos t$ decreasing?
17. For what values of t on the interval $[-2\pi, 2\pi]$ is $\tan t$ greater than 1?
18. For what values of t on the interval $[-2\pi, 2\pi]$ is $\tan t$ less than 0?
19. For what values of t on the interval $[\pi, 2\pi]$ is $h(t) = \tan t$ increasing?