

# Trigonometry Cover Page; What I know and can do

Question	First Day	Last Day
What is a radian?		Measures an angle and its based on arc : radius
If $\theta = \frac{11\pi}{6}$ what are the 6 trig ratios?  (solving)		$\cos\theta = \frac{\sqrt{3}}{2}$ $\sec\theta = \frac{2}{\sqrt{3}}$ $\sin\theta = -\frac{1}{2}$ $\csc\theta = -2$ $\tan\theta = -\frac{1}{\sqrt{3}}$ $\cot\theta = -\sqrt{3}$
What is a sinusoidal function?		A periodic function with a wave shape
What is the amplitude and period of the functions: $g_k(x) = 5f_k\left(\frac{\pi}{3}(x-1)\right) + 2$ Given $f_1(x) = \sin x$ and $f_2(x) = \tan x$  (reasoning)		$g_1(x)$ amp = 5 <span style="margin-left: 150px;"><math>T = 6</math></span>  $g_2(x)$ amp = none <span style="margin-left: 150px;"><math>T = 3</math></span>
What is the domain of the inverse trig functions?		$\arcsin x, x \in [-1, 1]$ $\arccos x, x \in [-1, 1]$ $\arctan x, x \in \mathbb{R}$

Determine the solution to

$$4 = 7 \cos\left(3\left(x + \frac{\pi}{12}\right)\right) - 1$$

(solving)

$$\frac{5}{7} = \cos \theta$$

$$\theta = \pm 0.775 + 2\pi n$$

$$3\left(x + \frac{\pi}{12}\right) = \pm 0.775 + 2\pi n$$

$$x = \pm 0.258 - \frac{\pi}{12} + \frac{2}{3}\pi n$$

$$x = -0.003 \text{ or } -0.520 + \frac{2}{3}\pi n$$

$$n \in \mathbb{Z}$$

Why is solving trig equations with sine more involved than solving trig equations with tangent or cosine?

(communication)

When solving sine we need to consider

$$\pi - x_0 \text{ or } -\pi - x_0$$

with cosine the solutions are  $\pm x_0$

with tan just add  $\pi n$

1 period of tangent is 1-to-1