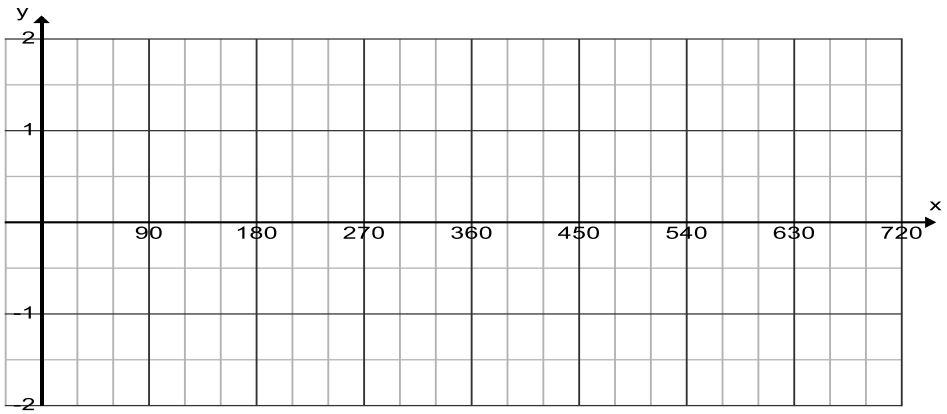
U6D2 MCR 3UI **Graphing Trigonometric Functions Using Degrees**

Use DESMOS, your calculator, and knowledge of special angles to complete the table of values and graph each function.

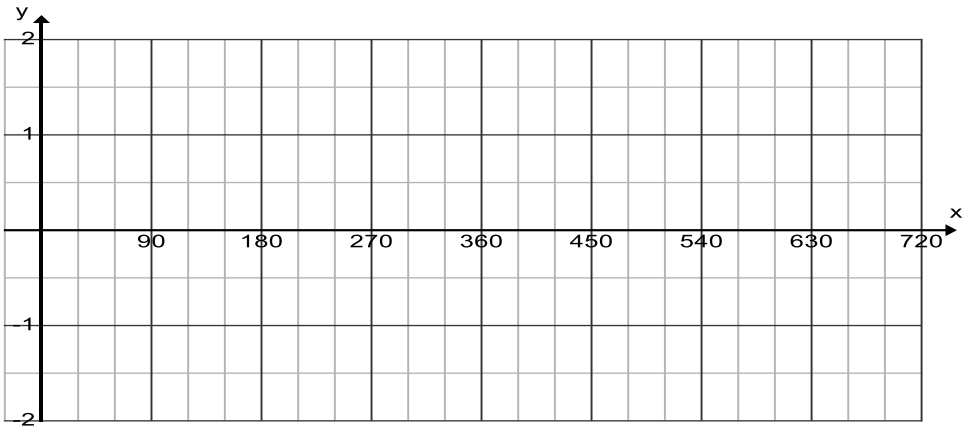
Graph of $y = sinx$

x	0	30	60	90	120	150	180	210	240	270	300	330	360	390
sin x exact														
sin x approx.														



Graph of $y = cosx$

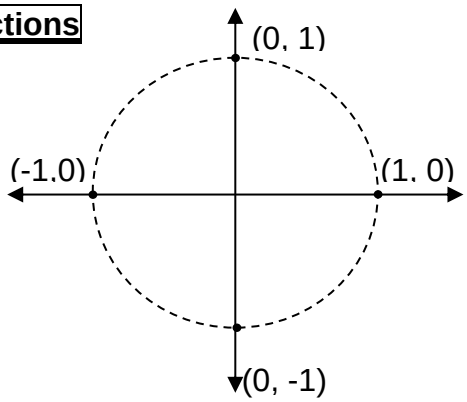
x	0	30	60	90	120	150	180	210	240	270	300	330	360	390
cos x exact														
cos x approx.														



For fun, use DESMOS to graph y = tan x. Is it periodic? If so, what is the period? amplitude?

Summarizing the Properties of Trigonometric Functions

Also called circular functions, trigonometric (trig) functions are based on angles. They are more specifically used to relate the angles of a triangle to the lengths of sides of a triangle.



Characteristics	$f(\theta) = \sin\theta$	$f(\theta) = \cos\theta$
Description	As a terminal arm rotates θ° about a circle with radius 1, $f(\theta) = \sin\theta$ represents the _____ length (rise) of the triangle created from any point on the circle.	As a terminal arm rotates θ° about a circle with radius 1, $f(\theta) = \cos\theta$ represents the _____ length (run) of the triangle created from any point on the circle.
Period		
Amplitude		
Maximum Value		
Minimum Value		
Equation of the Axis	$y =$	$y =$
Domain	$\{\theta \mid \theta$ $\}$	$\{\theta \mid \theta$ $\}$
Range	$\{y \mid y \in \mathbb{R},$ $\leq y \leq$ $\}$	$\{y \mid y \in \mathbb{R},$ $\leq y \leq$ $\}$
Interval(s) of Increase	$^\circ < \theta <$ $^\circ$, $^\circ < \theta <$ $^\circ$	$^\circ < \theta <$ $^\circ$
Interval(s) of Decrease	$^\circ < \theta <$ $^\circ$	$^\circ < \theta <$ $^\circ$
5 key points		
Sketch one cycle of Graph		

Notes:

The sine function and cosine function are _____ sinusoidal curves (same shape and size, just a different orientation)

The cosine curve is the sine curve translated _____$^\circ$ to the left or _____$^\circ$ to the right.