

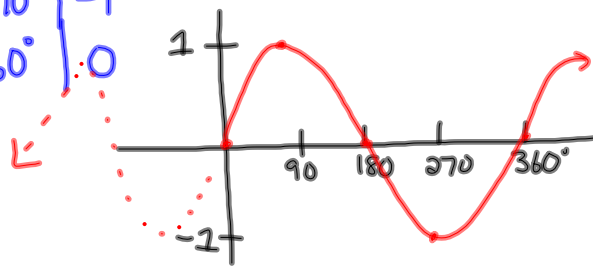
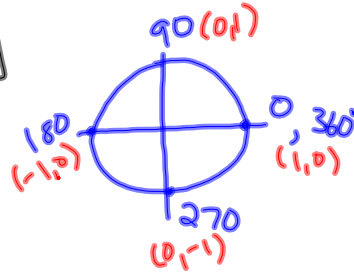
Chp.5 Trig Functions & Their Graphs

5.1 : Sine & Cosine Functions

Original function

$$y = \sin x$$

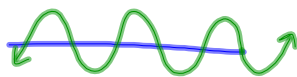
x	y
0	0
90°	1
180°	0
270°	-1
360°	0



Domain : $x \in \mathbb{R}$

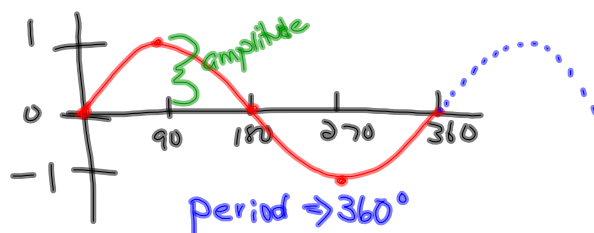
Range : $-1 \leq y \leq 1, y \in \mathbb{R}$

Sinusoidal Curve: a curve that oscillates repeatedly up and down from the centre line



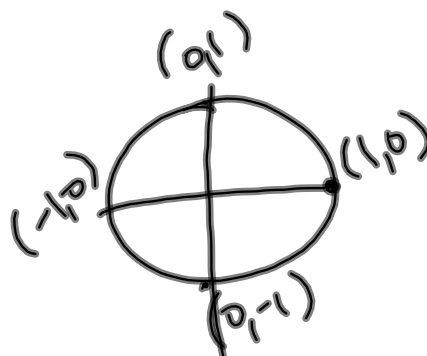
periodic function: a function that repeats itself over regular intervals over its domain

period: length of interval that is repeated

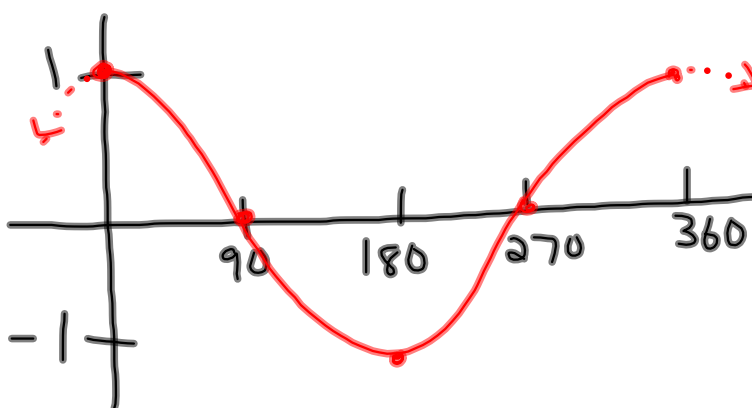


Amplitude = 1 (radius)

$$y = \cos x$$



x	y
0	1
90°	0
180°	-1
270°	0
360°	1



period $\Rightarrow 360^\circ$
 Amplitude $\Rightarrow 1$

5.2 : Transformations of Sine & Cosine

① $y = 2 \sin x + 1$

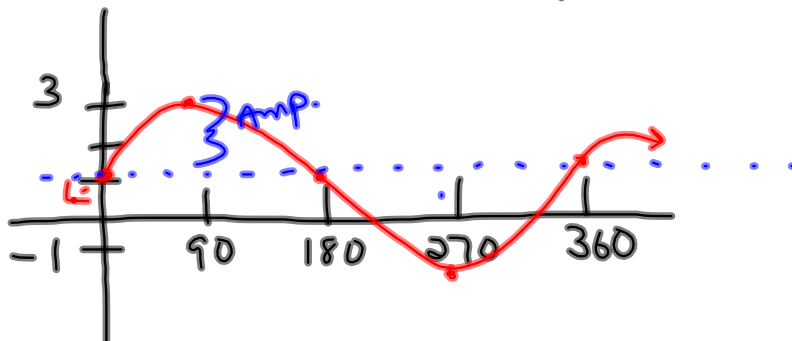
\swarrow
 v.s
 of 2

\uparrow
 v.t of 1

$$(x, y) \rightarrow (x, 2y + 1)$$

x	y
0	0
90	1
180	0
270	-1
360	0

x	y
0	1
90	3
180	1
270	-1
360	1



Domain: $x \in \mathbb{R}$
 Range: $-1 \leq y \leq 3, y \in \mathbb{R}$

Amplitude: 2
 * vertical stretch