

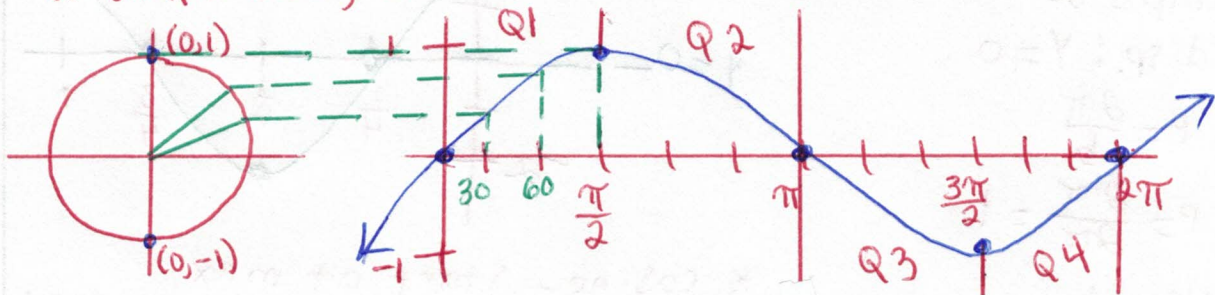
Graphs of periodic functions

UNIT 6 LESSON _____ INVESTIGATION _____ NOTES

Lesson Vocabulary

Sine function: $y = a \sin b\theta + c$

a - amplitude, b - # of cycles from 0 to 2π , c - y -displ.

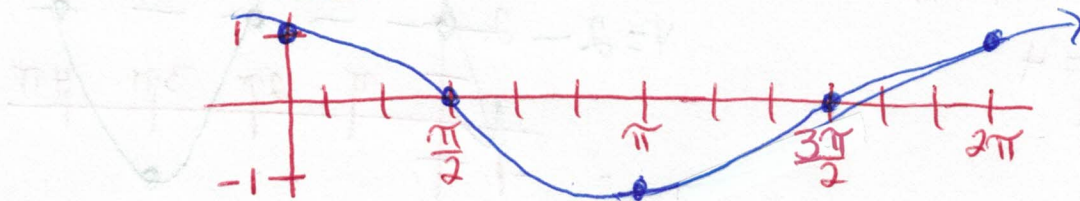


* Starts on y -axis at the y -displacement.

* Key points (max - zero - min - zero)

* Zero point is on the y -displacement

Cosine function: $y = a \cos b\theta + c$ (same as sine)



* Starts on y -axis at the max

* Key points (zero - min - zero - max)

* Zero point is on the y -displacement

To Graph - know if it is sine or cosine.

1. Draw y -displacement

2. Get amplitude (y -axis scale)

3. Use b from function to get period ($P = \frac{2\pi}{b}$)

4. Divide period by 4 (Key points - x axis scale)

5. Sketch one cycle

Example Problem(s)

ex.) Graph one cycle. List amplitude, Period, X-axis scale and Y-displacement.

a) $Y = 2 \cos 2\pi \theta$

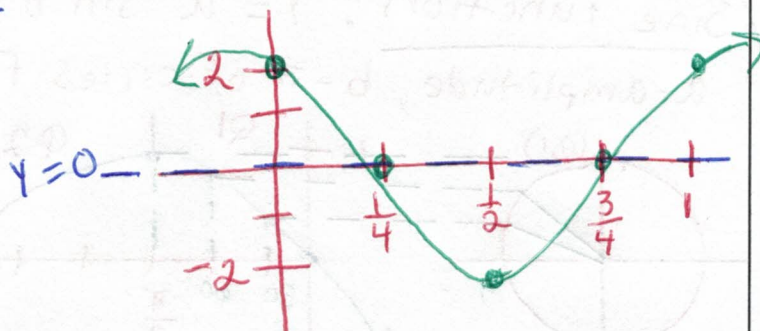
amp = 2

Y-disp.: $Y = 0$

$P = \frac{2\pi}{b}$

$P = \frac{2\pi}{2\pi} = 1$

X-axis Scale = $\frac{1}{4}$



* cosine - start at max
* X-axis should end at the period

b) $Y = 4 \sin \frac{1}{2} \theta + 2$

Y-disp.: $Y = 2$

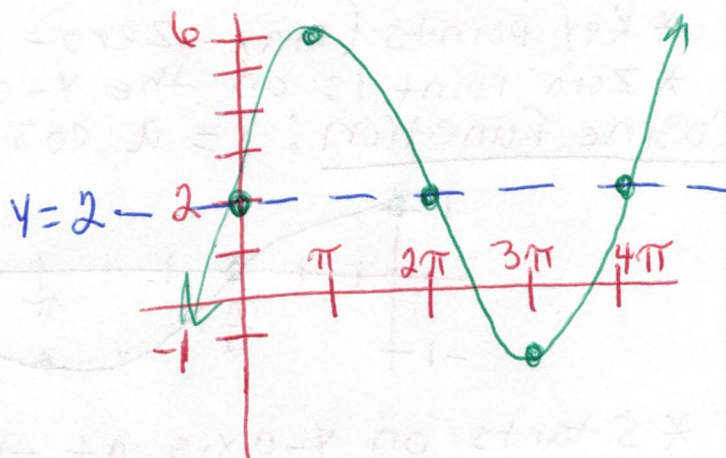
amp = 4

$P = \frac{2\pi}{b}$

$P = \frac{2\pi}{1/2}$

$P = 4\pi$

X-axis Scale = $\frac{4\pi}{4} = \pi$



* sine - start on Y-displ.
* X-axis should end at the period