

# Graphing Sinusoidal Functions

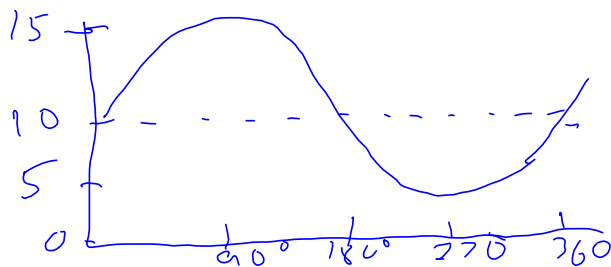
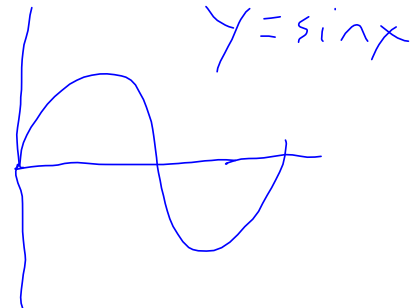
## Example 1

Graph  $f(x) = 5 \sin x + 10$

Solution:

- What is the amplitude of this graph?  $5$
- What is the period of the graph?  $360^\circ$
- What is the equation of the axis?  $y = 10$

What will the rest of the graph look like?



**Example 2**

Graph  $y = 3 \cos 2x$

What is the amplitude of this graph?

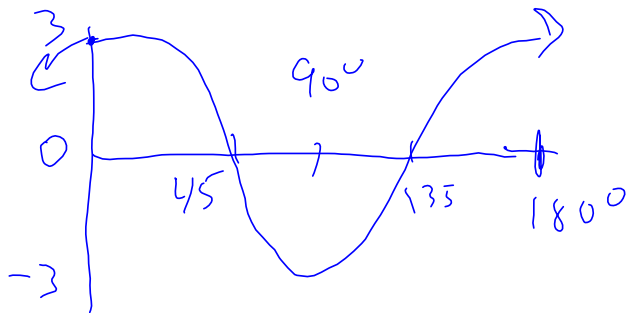
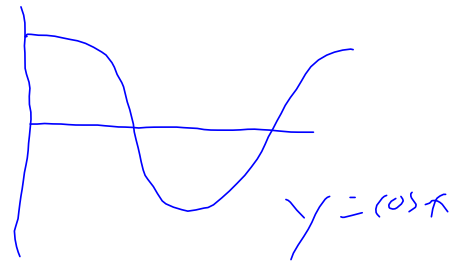
$3$   
 $\frac{360}{2} = 180^\circ$

What is the period of the graph?

What is the equation of the axis?

$y = 0$

What will the rest of the graph look like?



**Example 3**

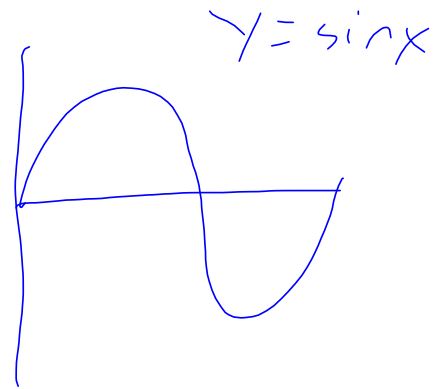
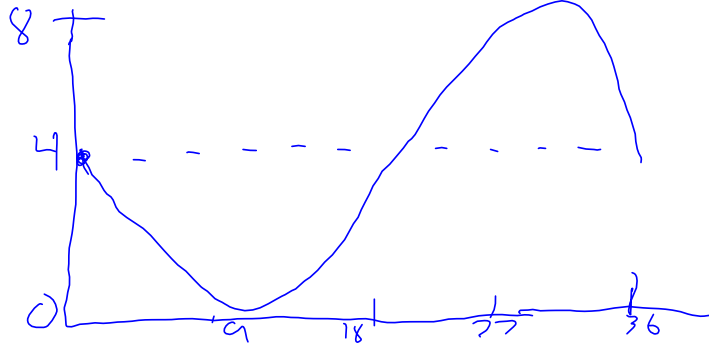
Graph  $y = -4 \sin 10x + 4$

What is the amplitude of this graph? 4

What is the period of the graph?  $\frac{360}{10} = 36$

What is the equation of the axis?  $y = 4$

What will the rest of the graph look like?



**Assigned Problems**

1. Complete the following table for each sinusoidal function.

Equation	Period	Amplitude	Equation of Axis
$f(x) = 3 \sin(4x) + 1$			
$y = -2 \cos(8x) + 6$			
$y = 100 \sin(6x) + 50$			

2. Sketch each of the following graphs.

a)  $f(x) = 3 \sin(10x) + 5$

b)  $y = -2 \cos(36x)$

c)  $f(x) = -5 \sin[12x] + 4$

d)  $y = 10 \cos[90x] + 20$