Real World Application Worksheet

Use the table to help you write the trig function for each problem.

Ex. 1

Kiki and Mikey are riding on a ferris wheel at a local carnival. The circular ferris wheel has a radius of 50 feet and is located 60 feet from the ground level. The ferris wheel makes a full rotation every 20 minutes. As a function relating the height of Kiki and Mikey on the ferris wheel to the time they ride (in minutes), find the following:

a) the amplitude of the seat.

b) the period of the seat.

c) the equilibrium of the ride.

d) an equation modeling the data presented.

	Amplitude	Trig Function	Omega, ω	X or Θ	Φ	Vertical Shift
Y=						
	(Distance from Midline)	sin or cos	$\omega=\frac{2\pi}{Pd}$	(VARIABLE)	Φ= -(PS)(ω)	(MIDLINE)

Example 2:

An evil litterer tosses a half-full (or half-empty) bottle of water into the sea. As the water moves the bottle bobs up and down. The distance between its highest and lowest point is 5 cm. It moves from the highest to the lowest point in 3 seconds and then back to the highest point 3 seconds later and so on.

Write a cos function that models the movement of the littered bottle in relationship to the equilibrium point.

	Amplitude	Trig Function	Omega, ω	X or Θ	Φ	Vertical Shift
Y=						
	(Distance from Midline)	sin or cos	$\omega=\frac{2\pi}{Pd}$	(VARIABLE)	Φ= -(PS)(ω)	(MIDLINE)

Example 3:

Write a sine function which models the oscillation of tides in KEY WEST, Florida if the equilibrium point is 7.8 feet, the amplitude is 5.5 feet, the phase shift is -2.0 hours, and the period is 12.4 hours. According to your model, find the average position of the tides after 7 hours.