**Exit/Entrance Slips for Sinusoidal Functions**

**8.2.  Describe, orally and in written form, the characteristics of a sinusoidal function by analyzing its equation.**

Determine the equation of the midline, amplitude, and period of the functions below. Is there a phase shift?

a. 

b. 

**Answer:**

a.

Amplitude = 3

Equation of the midline: y = 1

Period = 

Yes there is a phase shift

b.

Amplitude = 2

Equation of the midline: y = -4

Period = 

No phase shift

Students who get the above question, can work in groups to discuss the following questions. The others are with me to review the characteristics of sinusoidal functions.

These questions would be assigned for homework for those students who were working with the teacher.

The height of a rider on the London Eye can be modelled by the sinusoidal regression function



where *h* is the height of the rider above the ground, in meters, and *t* is the time in minutes after the ride starts.

a. According to the sinusoidal regression function, the maximum height of the rider above the ground is\_\_\_\_\_\_\_\_\_.

b. When the rider is at least 100 meters above the ground, she can see the parliament buildings. During each rotation of the Ferris wheel, the length of time that the rider can see the parliament building, to the nearest tenth of a minute, is \_\_\_\_\_\_\_\_\_\_ min.

Outside temperature over a day can be modeled as a sinusoidal function. Suppose you know the temperature is 68 degrees at midnight and the high and low temperature during the day are 80 and 56 degrees, respectively. Assuming *t* is the number of hours since midnight, find an equation for the temperature, *D*, in terms of *t*.

Find the

1. amplitude
2. equation of the midline
3. period