Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Advanced Functions and Modeling Unit 9 Homework 3**

**Using the graph, determine the amplitude, period, frequency, and vertical shift for each graph. Then write the function.**

1. 2.

Amplitude \_\_\_\_\_\_\_\_\_\_\_ Amplitude \_\_\_\_\_\_\_\_\_\_\_

Period \_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_\_\_

Frequency \_\_\_\_\_\_\_\_\_\_\_\_ Frequency \_\_\_\_\_\_\_\_\_\_\_\_

Vertical Shift \_\_\_\_\_\_\_\_\_\_ Vertical Shift \_\_\_\_\_\_\_\_\_\_

Cosine Function \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Cosine Function \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3.  4. 

Amplitude \_\_\_\_\_\_\_\_\_\_\_ Amplitude \_\_\_\_\_\_\_\_\_\_\_

Period \_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_\_\_

Frequency \_\_\_\_\_\_\_\_\_\_\_\_ Frequency \_\_\_\_\_\_\_\_\_\_\_\_

Vertical Shift \_\_\_\_\_\_\_\_\_\_ Vertical Shift \_\_\_\_\_\_\_\_\_\_

Sine Function \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Sine Function \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Identify the amplitude, period, phase shift, and/or vertical shift. Graph the function before and after the phase shift.**

5. $y=3\sin(\left(x-π\right)+1)$ 6. $y=-\cos((2x+π))$

Amplitude \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_\_\_\_ Amplitude \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_\_\_\_

Phase Shift \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Vertical Shift \_\_\_\_\_\_\_\_ Phase Shift \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Vertical Shift \_\_\_\_\_\_\_\_



7. $y=2\sin(\left(x+\frac{π}{2}\right)-2)$ 8. $y=2\cos(\left(\frac{1}{2}x-\frac{π}{2}\right))$

Amplitude \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_\_\_\_ Amplitude \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_\_\_\_

Phase Shift \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Vertical Shift \_\_\_\_\_\_\_\_ Phase Shift \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Vertical Shift \_\_\_\_\_\_\_\_

