Math 3/3H Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Per:\_\_\_

7.2 Graphing Sine and Cosine – Phase Shift

**Identify the amplitude, period, phase shift, and vertical shift, then sketch one period of the graph.**

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| Amp:  Period:  PS:  VS: | Amp:  Period:  PS:  VS: |
| Amp:  Period:  PS:  VS: | Amp:  Period:  PS:  VS: |
| Amp:  Period:  PS:  VS: | Amp:  Period:  PS:  VS: |
| Amp:  Period:  PS:  VS: | Amp:  Period:  PS:  VS: |
| Amp:  Period:  PS:  VS: |  |
| 1. A buoy oscillates up and down as waves go past. The buoy moves a total of 3.6 feet from its low point to its high point, and then returns to its high point every 8 seconds. Write a cosine function modeling the buoy’s vertical position at any time *t*. | 1. A Ferris wheel 50 feet in diameter makes one revolution every 40 seconds. The center of the wheel is 30 feet above the ground. Write a cosine function to model the height of a car on the Ferris wheel at any time *t*. |
| 1. Low tide is at 10:15 am and high tide is at 4:15 pm. The water level varies 64 inches between low and high tide. Write a cosine function to represent the change in water level. | 1. The lowest pitch a human can easily hear has a frequency of 30 cycles per second. Write a sine function representing the sound wave of the pitch. (Amplitude is 1) |
| 1. The highest pitch a human can easily hear has a frequency of 20,000 cycles per second. Write a sine function representing the sound wave of the pitch. (Amplitude is 1) | 1. In Buenos Aires, Argentina, the average monthly temperature is the highest in January and the lowest in July. It ranges from  to  . Write a cosine function that models the change in temperature according to the month of the year. |