1. A ferris wheel is 20 meters in diameter and is boarded from a platform that is 4 meters above the ground. The six o’clock on the ferris wheel is level with the loading platform. The wheel completes one revolution every 2 minutes. At $t = 0$ you are in the twelve o’clock position. You then make two revolutions and any additional part of a revolution to return to the boarding platform.

(a) What is the period of the graph?
(b) What is the amplitude of graph?
(c) What is the midline for the graph?
(d) On what interval is the graph defined?
(e) Graph the height as a function of time, $h = f(t)$.

2. The graph below describes your height, $h(t) = f(t)$, on a ferris wheel, where $h$ is the height in meters and $t$ is the time in minutes.

You boarded the ferris wheel before $t = 0$. The boarding platform is level with the bottom of the wheel. Determine the following.

(a) Your position and direction (up or down) at $t = 0$. 

(b) How long it takes the wheel to complete one full revolution.
(c) The diameter of the ferris wheel.
(d) At what height above the ground you board the wheel.
(e) The length of time the graph shows you riding the wheel.

3. Graph \( y = 2 \cos(4t) + 5 \)

4. Graph \( y = 5 \cos \left( \frac{\pi t}{4} \right) + 6 \)

5. What is the graph of the function in part (2)?