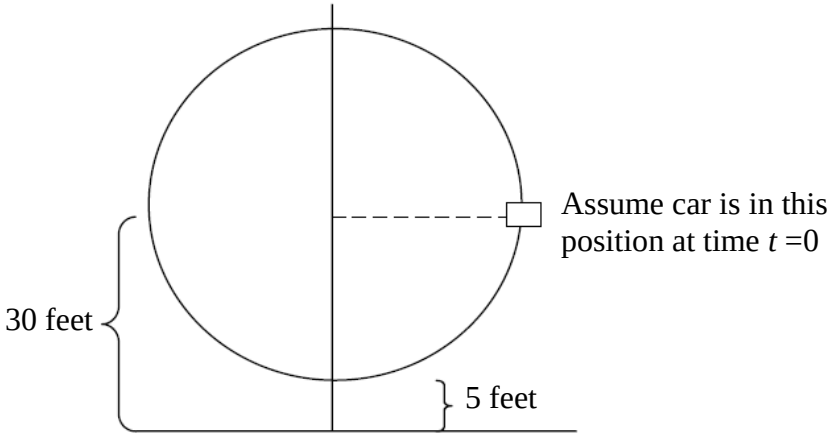
Ferris Wheel

A ferris wheel 50 ft in diameter makes 4 revolutions in one minute.
The center of the wheel is 30 ft. above the ground. The wheel is boarded 5 ft. off the ground.
Assume the car travels **counterclockwise**.



Without using an equation, graph the height of the Ferris Wheel car, in feet, for a half minute ride.
At t = 0, assume the car is in the position shown above (in the 3 o'clock position).

Writing Assignment 2: Ferris Wheel
Due: Monday, August 31, 2009

Name _____
Section: 9:00 11:00

Suppose the height of the Ferris Wheel on the back side of this sheet is given by $y = H(t)$.

(4) 1. In the first minute, you are at the top of the Ferris Wheel (the 12 o'clock position) four times. What values of t are these?

t = _____ min, _____ min, _____ min, and _____ min.

(3) 2. Hint: Review Section **5.1** to answer the following.

a. How does the graph of $a(t) = H(t + \frac{1}{4})$ compare to the graph of $y = H(t)$?

b. How does the graph of $b(t) = H(t - \frac{1}{4})$ compare to the graph of $y = H(t)$?

c. How does the graph of $c(t) = H(t) + 2$ compare to the graph of $y = H(t)$?

(1) 3. Interpret what $c(t) = H(t) + 2$ means in real life terms. Be specific. (Describe the properties of the Ferris Wheel.)

4. Report the period, amplitude, and the equation of the midline for $y = H(t)$.
period: _____ amplitude: _____ midline: y = _____

(2) 5. a. Report the period, amplitude, and the equation of the midline for $a(t) = H(t + \frac{1}{4})$
period: _____ amplitude: _____ midline: y = _____

b. Report the period, amplitude, and the equation of the midline for $c(t) = H(t) + 2$
period: _____ amplitude: _____ midline: y = _____