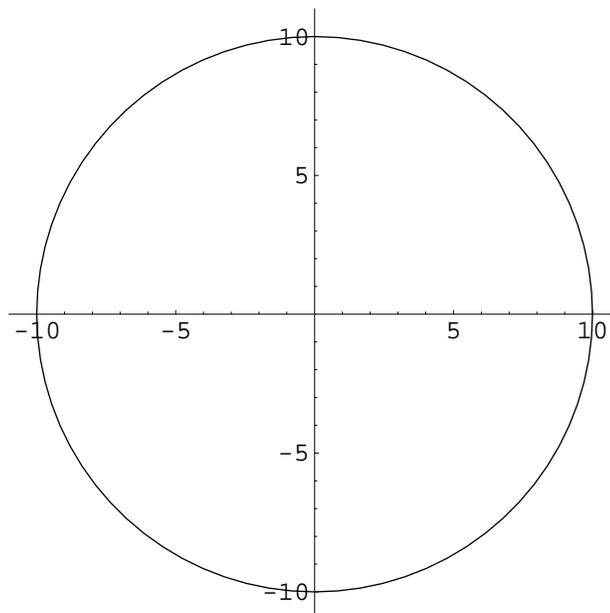


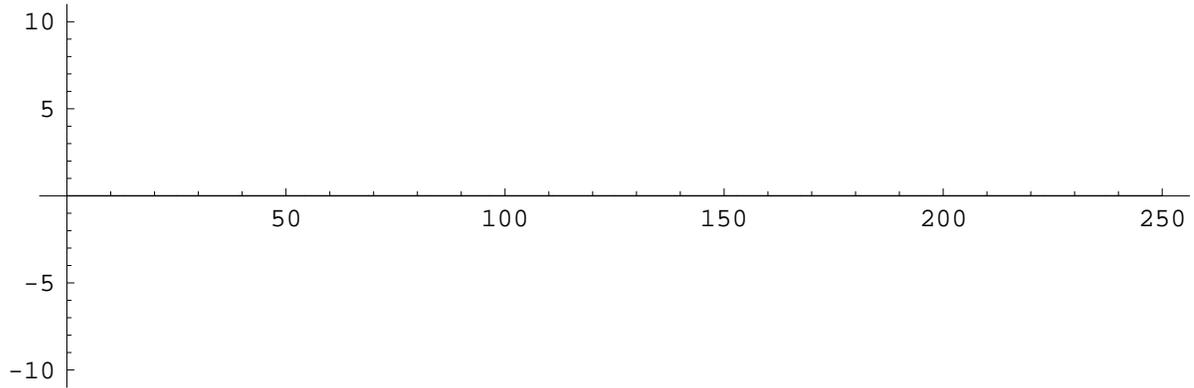
While spending a day at the fair, you decide to take a ride on the Ferris wheel. The Ferris wheel has a radius of 10 meters and makes one revolution every 2 minutes. Place the origin of a coordinate system at the center of the Ferris wheel, and suppose that at time $t = 0$ you are in a seat on the wheel at the point $(10, 0)$ going up.

- Let $v(t)$ be your vertical position (that is, your height) at time t , where t is given in seconds. Let $h(t)$ be your horizontal position at time t , where t is given in seconds. Complete the following table of values. Estimate where necessary.

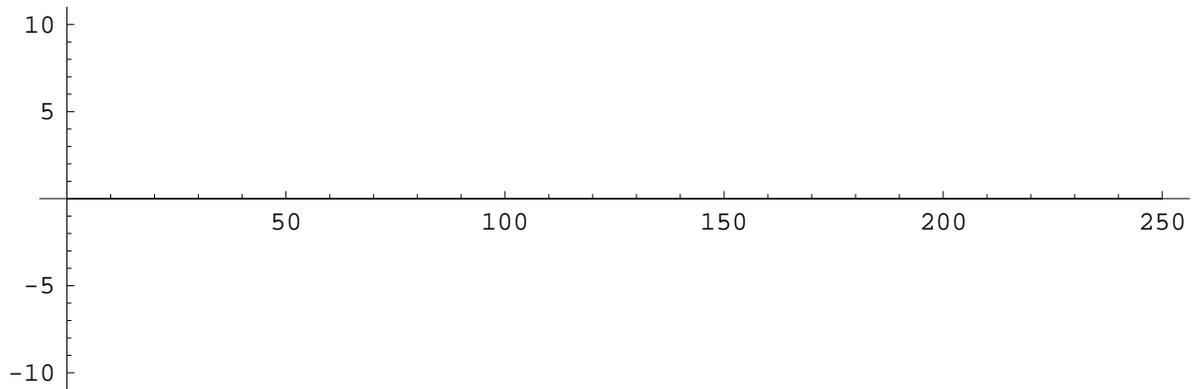
t	$v(t)$	$h(t)$
0	0	10
10		
15		≈ 7
20		
30	10	
45		
60		-10
70	≈ -5	
80		
90		
120	0	10
130		
135		
140		
150		
180		
240		



2. Sketch the graph of $v(t)$ from $t = 0$ to $t = 240$ on the set of axes below. Use your answers to Question 1 to help you do so.



3. Sketch the graph of $h(t)$ from $t = 0$ to $t = 240$ on the set of axes below. Use your answers to Question 1 to help you do so.



4. At what times, $t \geq 0$, will you be at the point $(-10, 0)$?
5. At what times, $t \geq 0$, will your horizontal position be 0?
6. Describe in words how the graphs of $v(t)$ and $h(t)$ would change if at time $t = 0$ you were at the point $(10, 0)$ going *down* instead of going *up*?