Coaster Track

NAME_____

The Steel Dragon in Japan was built in 2000 and is one of the longest and tallest roller coasters in the world.

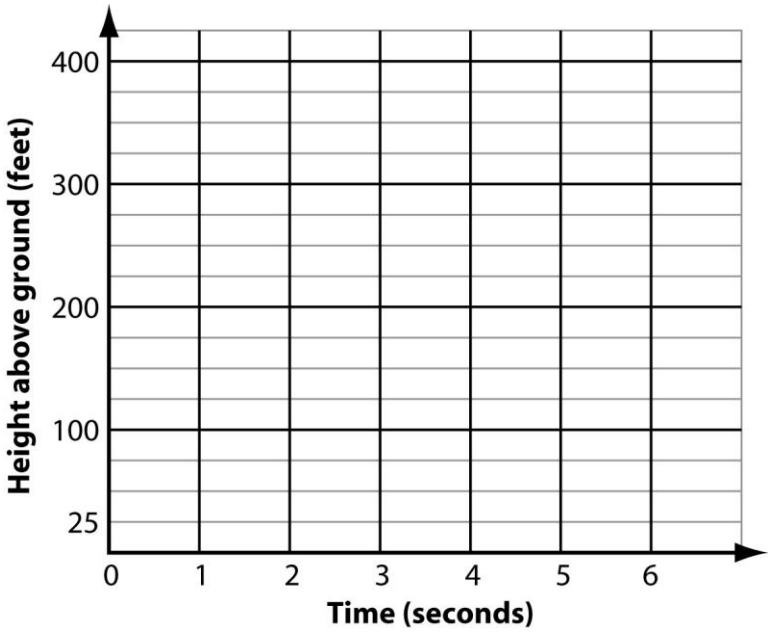
Use the following function to determine the height of the Steel Dragon as it falls from its tallest drop. The variable h represents the height above ground (in feet) and t represents the time the coaster has been falling (in seconds).

$$h = 400 - 16t^2$$

1. Create a table of values to determine how long it takes the Steel Dragon to reach the bottom. Show your work in the table. Write the data as an ordered pair.

TIME (t)	SUBSTITUTE INTO EQUATION	HEIGHT ABOVE GROUND (h)	ORDERED PAIR (t ,h)
0	$h = 400 - 16(0)^2$		

2. Graph the ordered pairs below.



3. What is the height of the coaster before it drops? How do you know?

4. After how many seconds does the Steel Dragon reach the bottom? How do you know?

5. Determine the average velocity of the Steel Dragon by using the function below,

$$V = \frac{\Delta h}{\Delta t}$$

where V represent the velocity, Δh is the height of the drop and Δt is the time it took the coaster to reach the bottom.