Physical Science Name_____

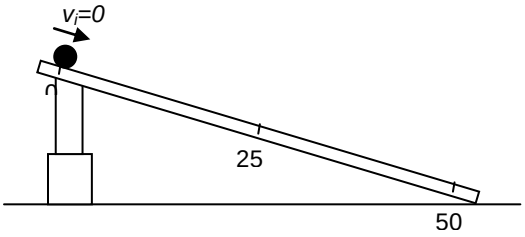
Motion **Acceleration** 1 2 3 4 5 6 7 8

1. What is the acceleration of a car that travels in a straight line at a constant speed?

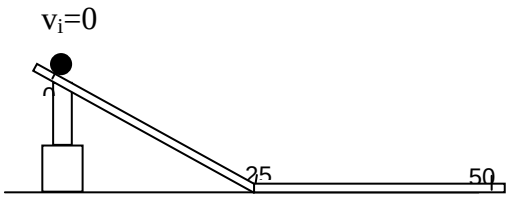
2. While driving a car, what are two ways you could cause the car to accelerate?

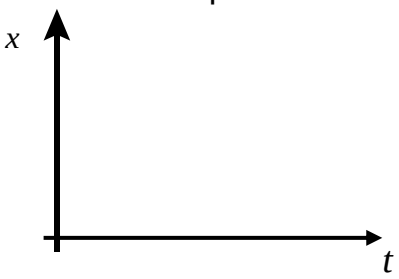
3. A rollercoaster rapidly picks up speed as it rolls down a slope. As it starts down the slope, its speed is 4 m/s. Three seconds later, its speed is 22 m/s. What is its acceleration?

4. For the situation below, draw a qualitative graph of position vs. time.



5. For the situation below, draw a qualitative graph of position vs. time. Assume the ball does not experience any change in velocity while on the flat part of the track.

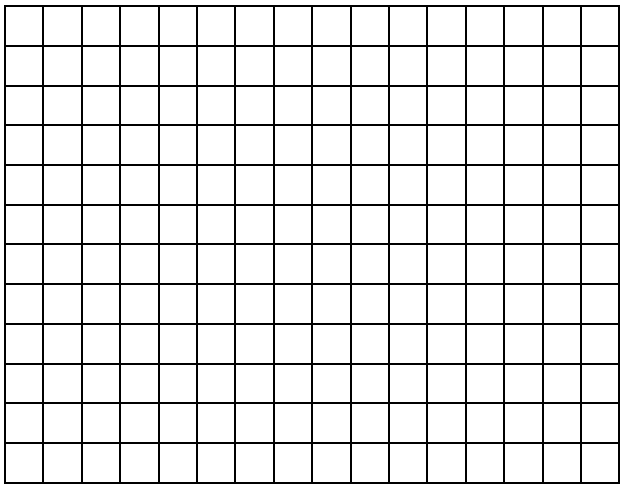




6. When hit by Bubba Watson, a golf ball can reach a speed of 87 m/s in 0.005 s. What is the acceleration of the golf ball?

7. The data set below was taken for a wheel that started at rest rolling down a hill. Use the data to create a graph in the space provided.

t (s)	x (cm)
0.0	0.0
1.0	5.0
2.0	20.0
3.0	45.0
4.0	80.0
5.0	125.0
6.0	180.0



a. What is the average velocity of the wheel after two seconds? What is the average velocity of the wheel after four seconds?

b. What is the acceleration of the wheel from t=2s to t=4s?