**Acceleration and Acceleration Graphs**

**General Concepts**

1. Define acceleration:
2. List the 3 things that can cause a change in acceleration AND give me an example of each:
	1. 1st thing: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Example:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. 2nd thing: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Example:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	3. 3rd thing: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Example:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. A large acceleration (compared to a small one) means that an object is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. A negative acceleration means that an object is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. The gravitational force between two objects depends upon: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	1. As \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ increases, so does the gravitational force
	2. As \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ decreases, the gravitational force increases
6. If a graph is showing a positive slope, and the graph itself is a straight line, what must be the x and y axis if the straight line is showing a constant velocity?
7. If a graph is showing a positive slope, and the graph itself is a straight line, what must be the x and y axis if the straight line is showing a constant acceleration?
8. Multiple Choice: (*Only 1 option is correct)* A ball is thrown straight up in the air. Which of the following correctly explains what happens as the ball travels upward?
	1. Acceleration is negative and velocity is negative.
	2. Acceleration is negative and velocity is positive.
	3. Acceleration is zero and velocity is positive.
	4. Acceleration is zero and velocity is negative.
9. Which of the following examples describe a ball experiencing positive acceleration?
	1. A ball rolling down a ramp *(Circle one: YES or NO)*
	2. A ball being dropped straight down *(Circle one: YES or NO)*
	3. A ball rolling up a steep ramp *(Circle one: YES or NO)*

**Reading Graphs and Calculations**



1. What is the average acceleration of the ball in the graph to the left? (Show your work)

**Using the graph to the right, answer the following:**

1. During which time interval is the skateboarder experiencing constant velocity? *(ex: from 10s to 15s)*
2. During which time interval is the skateboarder experiencing constant acceleration? *(ex: from 10s to 15s)*
3. During which time interval is the skateboarder experiencing constant deceleration? *(ex: from 10s to 15s)*
4. Calculate the acceleration that is occurring between 4 seconds and 8 seconds. Show your work!
5. Which of single the following statements describe the motion shown on the graph to the right?
	1. moving forward, constant speed, slowing down
	2. speeding up, constant speed, slowing down
	3. moving forward, stopped, moving backward
	4. speeding up, stopped, moving backward
6. What is the net change in velocity for the toy car from 0s to 4 seconds on the graph to the right??