

3.5 Review Questions

1. A ball is rolling across a horizontal tabletop. Draw the position of the ball after every second if the ball were
 - a. going a constant velocity.
 - b. going a constant positive acceleration.
 - c. going a constant negative acceleration.

2. How are velocity and acceleration different?

3. Name three ways you can accelerate your bike.

4. Graph the following set of data. Draw the lines by connecting each dot.

Describe the motion of the object. Is it at a constant velocity? How do you know? What's it doing as time goes on?

time (s)	position (m)
0	0.0
1	0.5
2	2.0
3	4.5
4	8.0
5	12.5
6	18.0
7	24.5
8	32.0
9	40.5
10	50.0

5. An F-18 Hornet is sitting on the deck of an aircraft carrier. The launch signal is given and, 1.8 s later, the plane is traveling 165 miles/hour (74 m/s). What is the acceleration of the plane?

6. After it clears the flight deck, the plane continues to accelerate at 5 m/s/s for a time of 25 s.

- a. How fast is it going at the end of this period?
- b. What is this speed in miles/hour?

7. When coming in for a landing, the plane has an initial speed of 150 mi/hr (67 m/s). It hits the deck, grabs an arresting wire with its tailhook, and accelerates at -23 m/s/s. How much time does it take to come to a stop?