

Name: _____

Date: _____ Block: _____

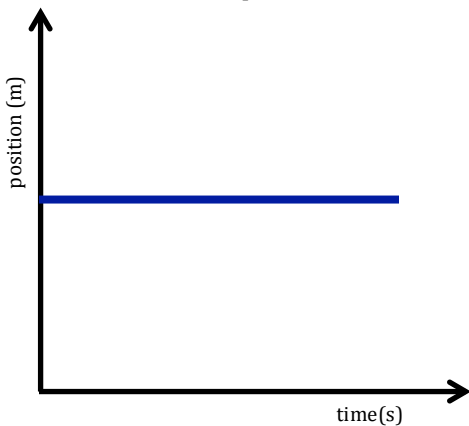
Motion Sensors 201

You have spent the past few class periods creating and analyzing position vs. time graphs that represent constant velocity motion. In this activity, you will be matching graphs to video examples of motion, translating graphs into words, and creating graphs from a set of written instructions.

Part I

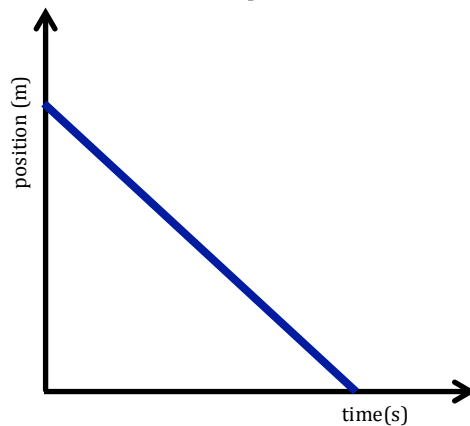
Go to www.fraserphysics.weebly.com. Scroll down to the bottom of the page to October 3, 2012. Click on the link provided to view the videos for the activity. Match the six videos to the graphs below that depict their motion.

Graph 1



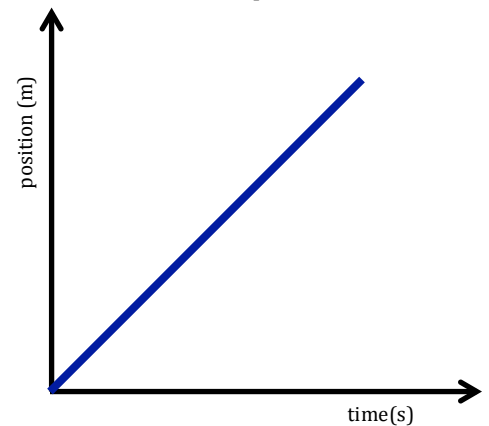
Video # _____

Graph 2



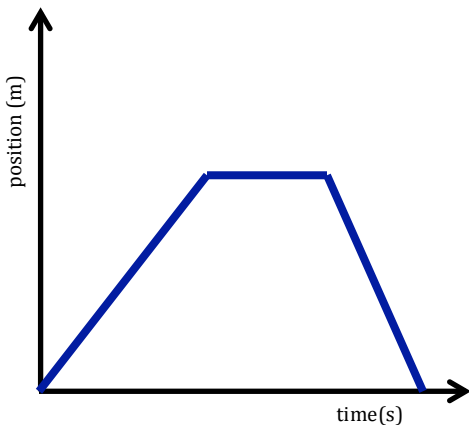
Video # _____

Graph 3



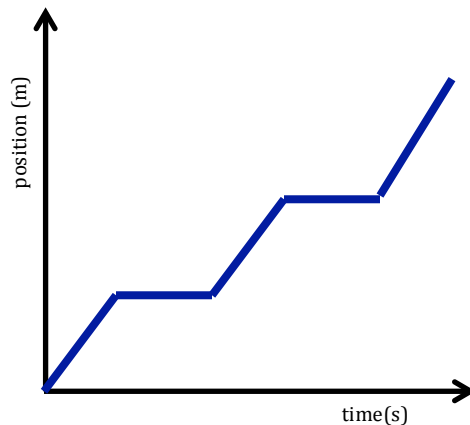
Video # _____

Graph 4



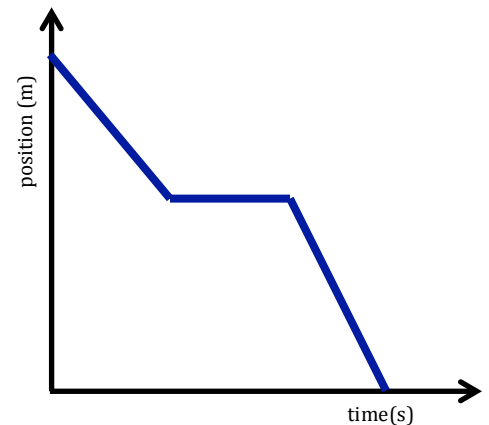
Video # _____

Graph 5



Video # _____

Graph 6



Video # _____

Part 2

For the following graphs, please describe the motion depicted. For **each graph**, please describe the starting position, direction, and speed/velocity of the objects. The lists below describe some possible terms to use.

Starting Position

In front of origin

Behind the origin

At the origin

Direction of Motion

Toward the origin

Away from the origin

+/- direction

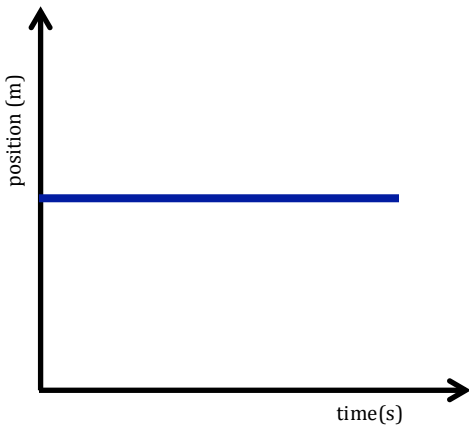
Speed/Velocity

Constant +/- velocity

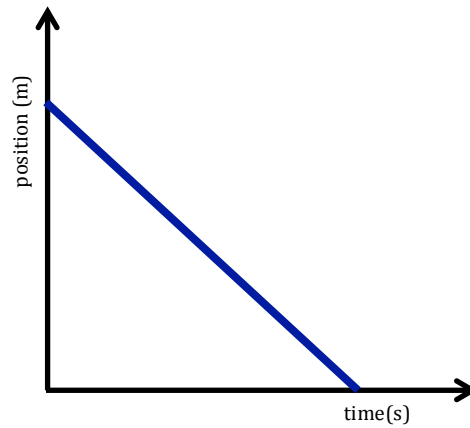
At rest/stopped

Speeding up/Slowing down

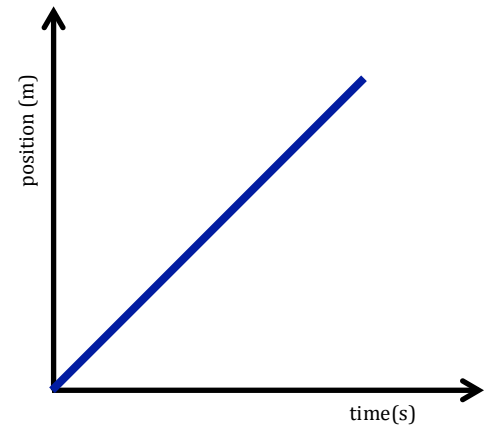
Graph 1



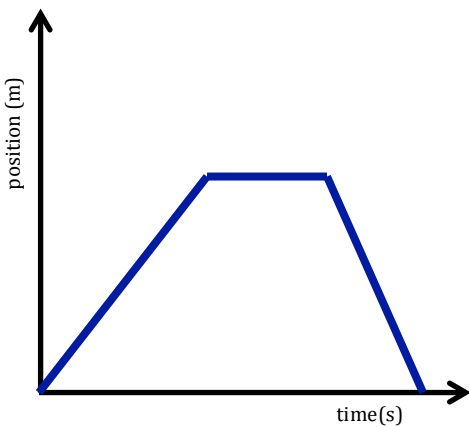
Graph 2



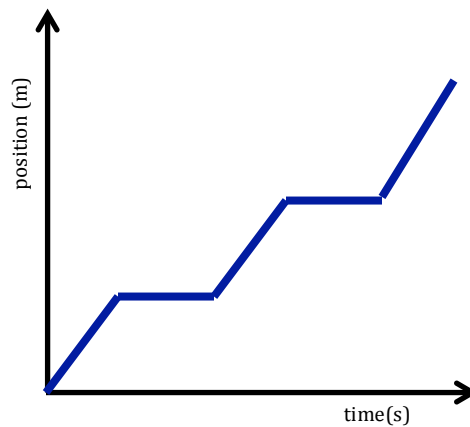
Graph 3



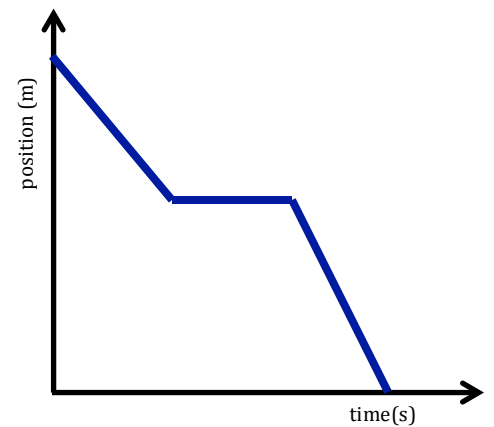
Graph 4



Graph 5

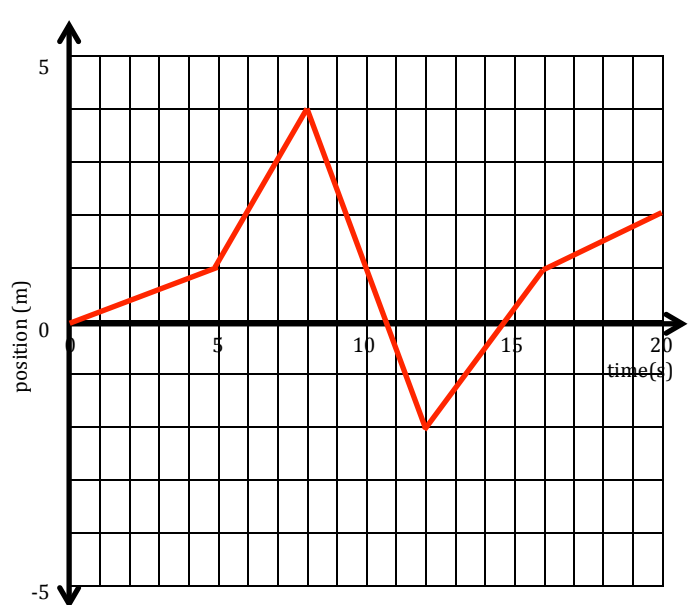
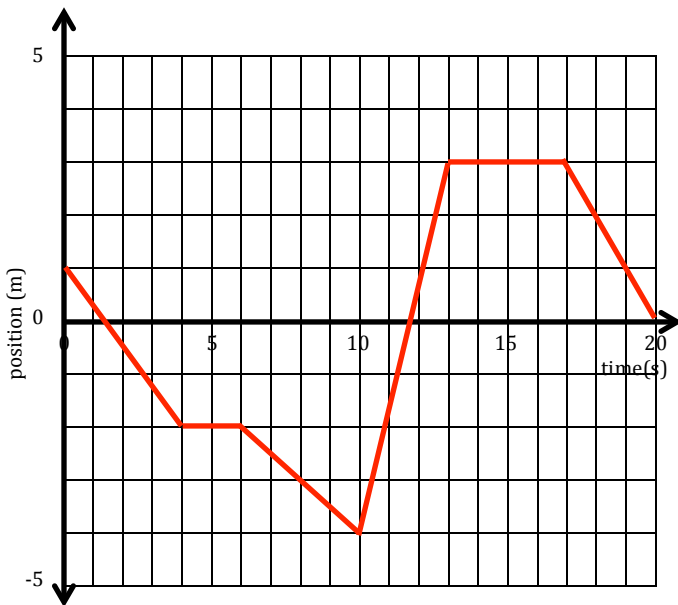
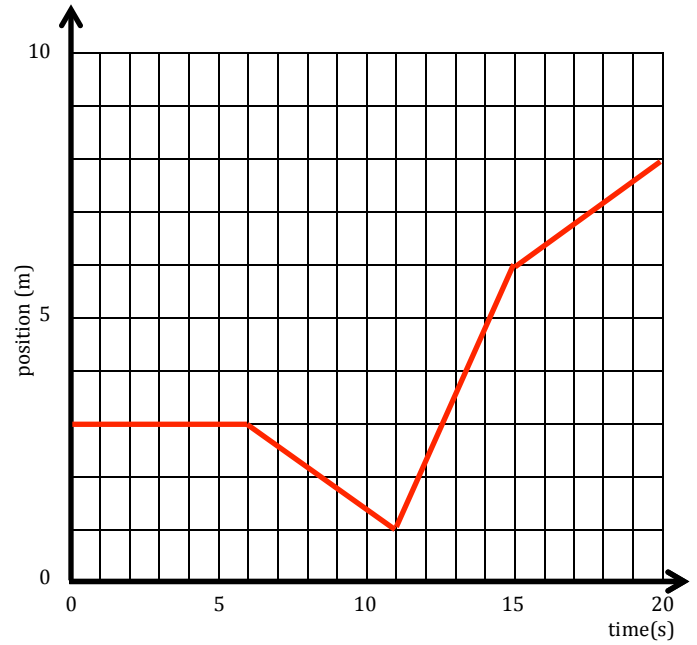
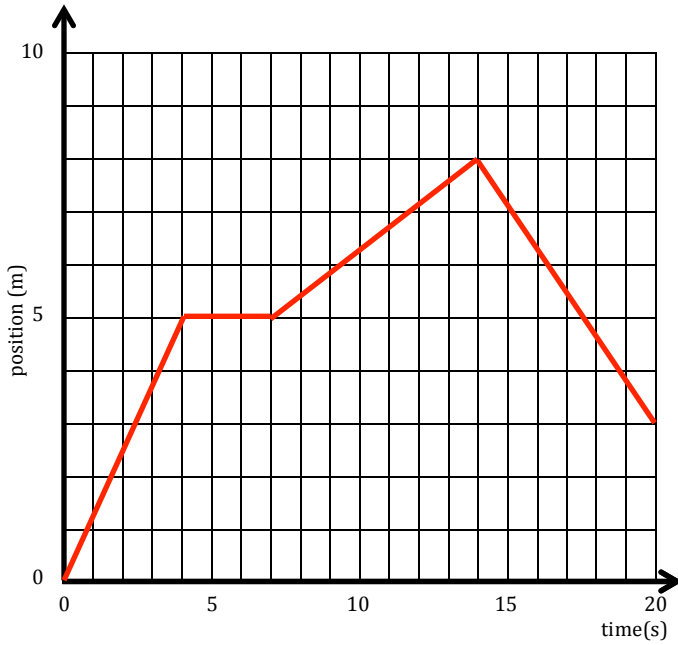


Graph 6



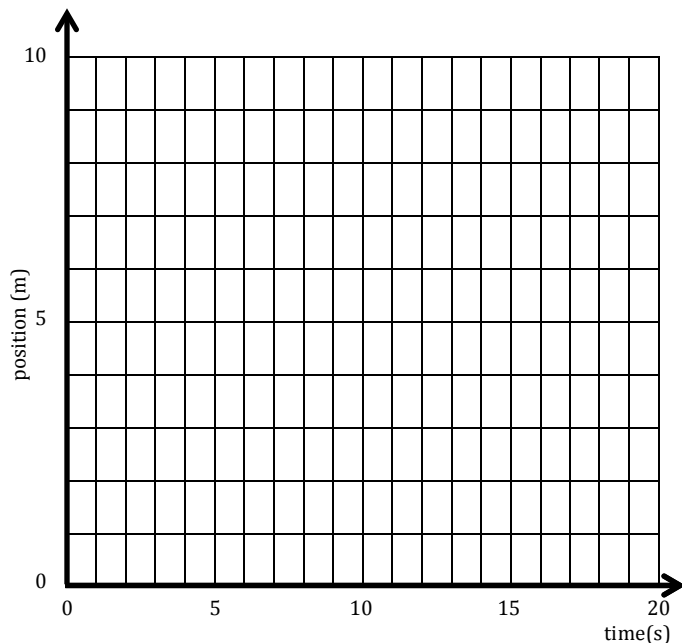
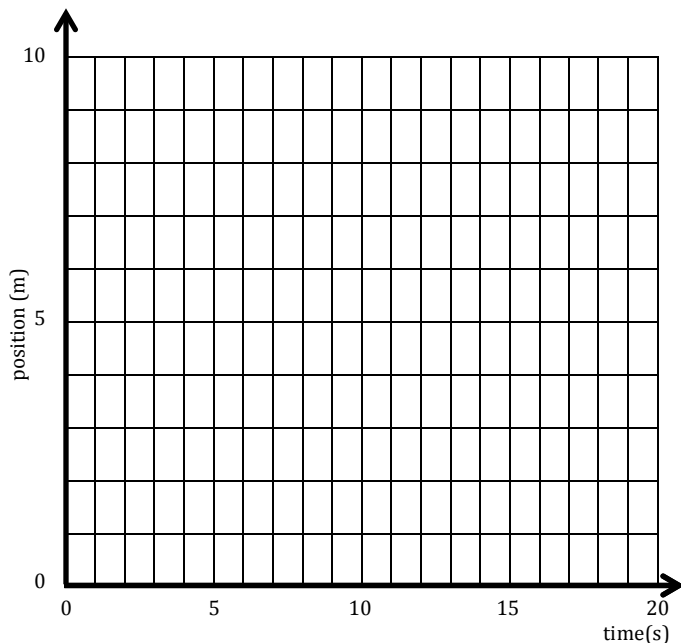
Part 3

Describe the motion depicted in the following graphs. Notice that this time the axes are labeled. Please use descriptions similar to those in Part 2, but this time be sure to include positions and times when appropriate.



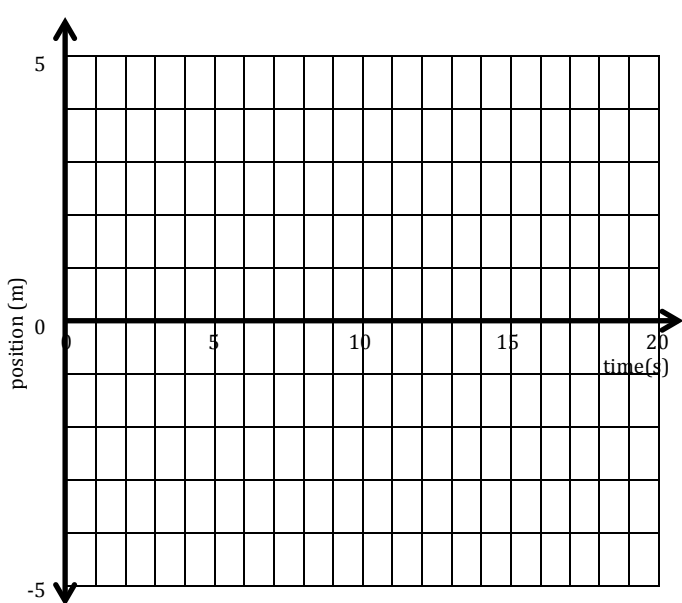
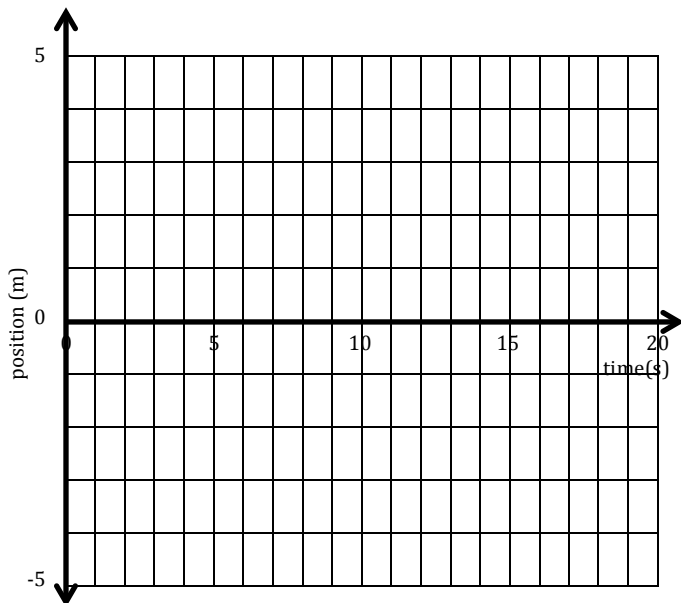
Part 4

Read the following descriptions of motion and draw the corresponding position vs. time graph on the axes provided. Please use a ruler to draw straight lines.



Mr. Woods starts at 3 meters. He takes 2 seconds to walk 4 meters in the positive direction. He stops for 6 seconds to read a text message on his phone. He turns around and walks 6 meters in 5 seconds. He saw that he passed a plastic bottle on the ground so he turned around and walked the 1 meter in 3 seconds to pick it up. He stood there and shot it into the recycle bin and celebrates with a victory dance for 4 seconds.

Ms. Witt started at 10 meters. She stopped to talk to Mrs. Kovalcik in the hallway for 6 seconds. She walked 4 meters toward her classroom (the negative direction) in 4 seconds. She stopped for a second to sneeze and kept walking 2 meters in 6 seconds. She heard her phone ringing in her classroom, so she ran the last 4 meters in 3 seconds.



Mr. Muschong starts at -3 meters and takes 4 seconds to walk 2 meters in the positive direction. He turns around and walks 1 meter in 3 seconds where he stops and waits for two seconds. He sees trouble brewing in the hallway so he quickly walks 4 meters in 3 seconds in the positive direction. He stops and talks to the kids for 6 seconds and continues on his way for 3 meters in 2 seconds.

Mr. Nowinski thought he would try a new workout routine with his swimmers. He had them start at 1 meter and walk 2 meters in the positive direction for two seconds. They had to turn around and take 4 seconds to walk 4 meters. He had them turn around again and walk 2 meters in 2 seconds. The cycle continued with the same pattern for another 12 seconds.