

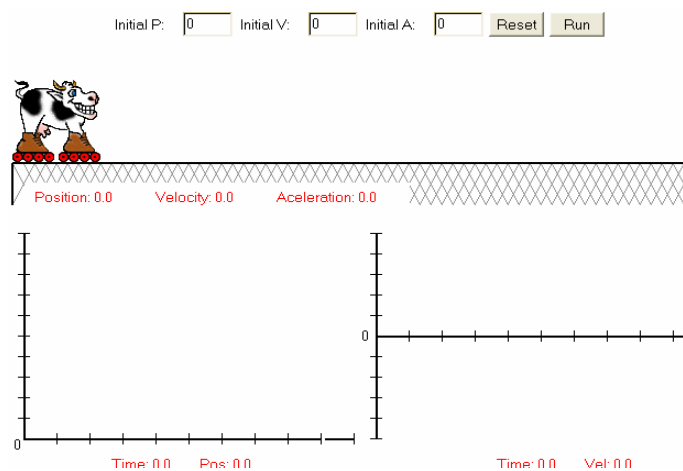
## Graphs of Motion in One Dimension

**Purpose:**

to examine and compare the shapes of position-time and velocity-time graphs for objects moving in one dimension

**Procedure:**

Use the simulation at the web site <http://jersey.uoregon.edu/vlab/block/Block.html> to complete the summary table illustrating shapes of graphs for objects experiencing one-dimensional motion.



Use the knowledge you gain from this simulation and class discussion to complete the parts of the table illustrating motion that the simulation will not run.

Initial Position	Initial Velocity	Acceleration	Sketch of Position-Time Graph	Sketch of Velocity-Time Graph
0	Positive	0		
0	Negative	0		
0	0	Positive		
0	0	Negative		
Positive	0	Positive		
Positive	0	Negative		

Initial Position	Initial Velocity	Acceleration	Sketch of Position-Time Graph	Sketch of Velocity-Time Graph
Negative	0	Positive		
Negative	0	Negative		
0	Positive	Positive		
0	Positive	Negative		
0	Negative	Positive		
0	Negative	Negative		
Positive	Positive	0		
Positive	Negative	0		
Negative	Positive	0		
Negative	Negative	0		
Positive	Positive	Positive		

Initial Position	Initial Velocity	Acceleration	Sketch of Position-Time Graph	Sketch of Velocity-Time Graph
Positive	Positive	Negative		
Positive	Negative	Positive		
Positive	Negative	Negative		
Negative	Positive	Positive		
Negative	Positive	Negative		
Negative	Negative	Positive		
Negative	Negative	Negative		
0	0	0		
Negative	0	0		
Positive	0	0		

Questions:

1. What is indicated by a **velocity-time** graph that crosses the **x-axis**?
2. How can you tell by looking at a **position-time** graph whether or not the object was changing speed?
3. How can you tell by looking at a **velocity-time** graph whether or not the object was changing speed?
4. What is the effect of changing the initial position on **position-time** and **velocity-time** graphs?
5. What is represented by the **y-intercept** on a **position-time** graph?
6. What is represented by the **y-intercept** on a **velocity-time** graph?
7. What is represented by an **x-intercept** on a **position-time** graph?
8. What is represented by an **x-intercept** on a **velocity-time** graph?
9. No matter what the initial position and initial velocity are, the **velocity-time** graph of an object with a **positive acceleration** will always ...
10. No matter what the initial position and initial velocity are, the **velocity-time** graph of an object with a **negative acceleration** will always ...
11. No matter what the initial position and initial velocity are, the **velocity-time** graph of an object with **no acceleration** will always ...