Name _____ Hour _____

Moving Man Graphs

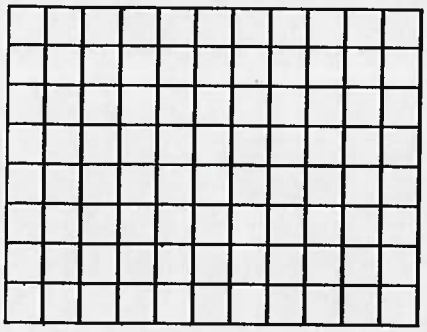
Go to Website: **http://phet.colorado.edu/simulations/sims.php?sim=The_Moving_Man**

Sketch the Graph pattern for the following types of motion. You will graph distance, velocity, and acceleration for each type of motion.

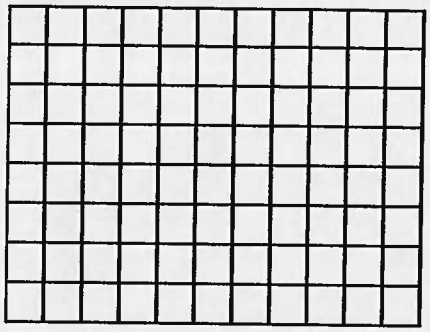
Purpose/Objective: To be able to identify and describe motion on a position, velocity or acceleration graph.

Situation #1: No Motion (velocity = 0 and acceleration = 0). – 5

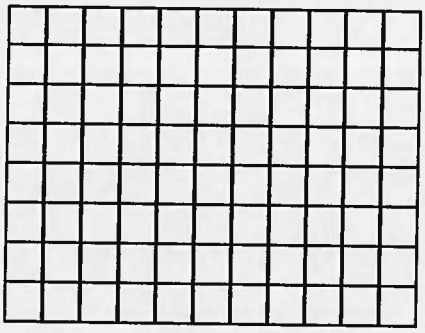
Distance Vs Time



Velocity vs Time

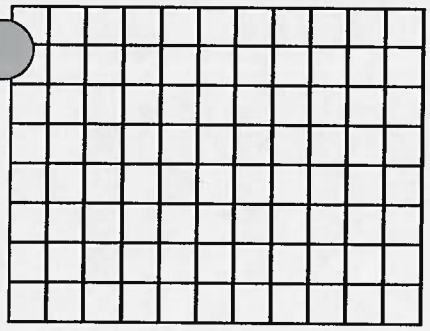


Acceleration vs Time

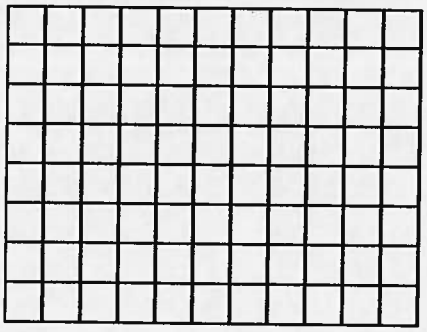


Situation #2: Moving at **Constant Velocity to the RIGHT**. (Velocity = +5 m/s, Position = -9m, Acceleration = 0)

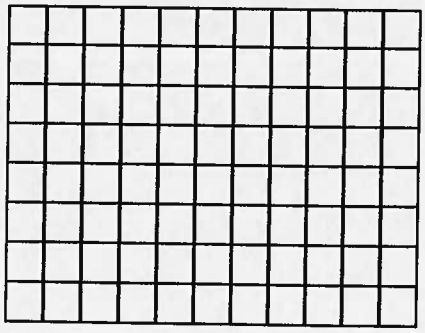
Distance Vs Time



Velocity vs Time

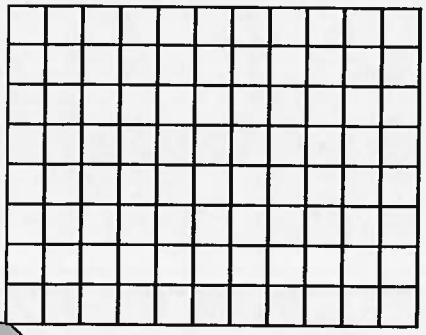


Acceleration vs Time

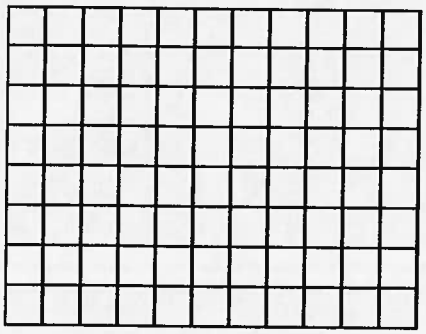


Situation #3: **Constant Velocity to the LEFT**. (Velocity = -5 m/s, Position = +9m, Acceleration = 0)

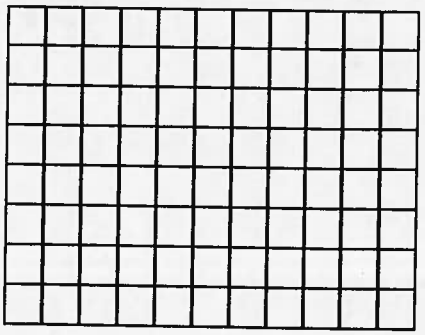
Distance Vs Time



Velocity vs Time

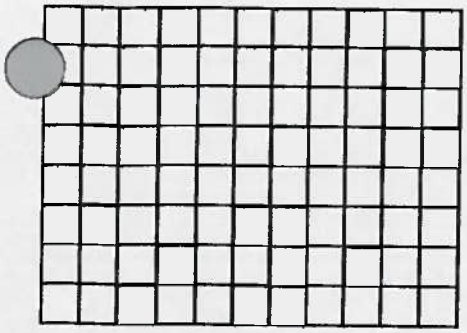


Acceleration vs Time

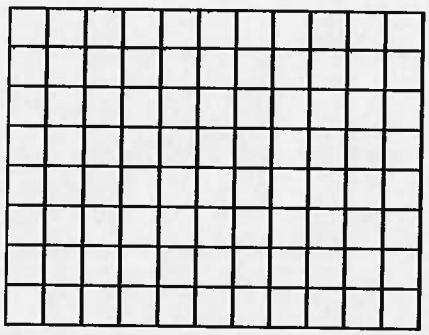


Situation #4: Acceleration from REST. (Position = -9m, velocity = 0 and acceleration = +1).

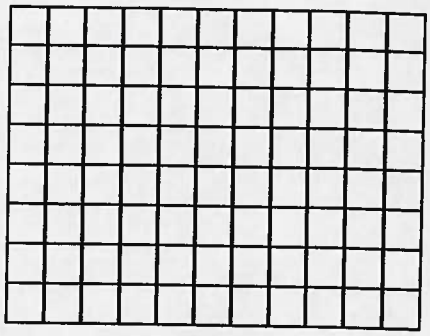
Distance Vs Time



Velocity vs Time

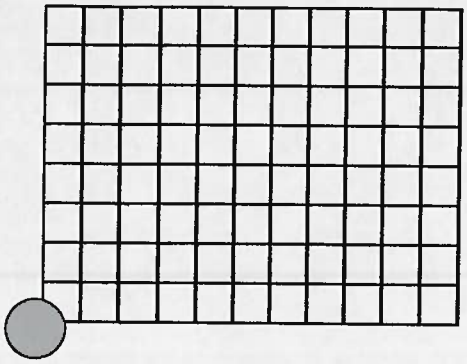


Acceleration vs Time

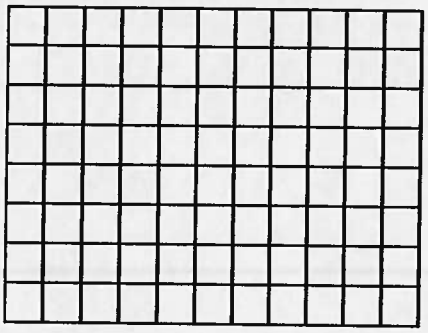


Situation #5: Moving to the right with constant negative acceleration.
(Position -9 m, velocity +5 m/s, acceleration -1 m/s^2)

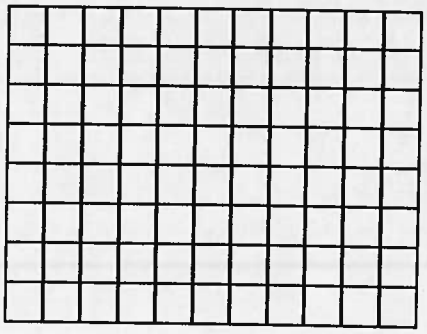
Distance Vs Time



Velocity vs Time

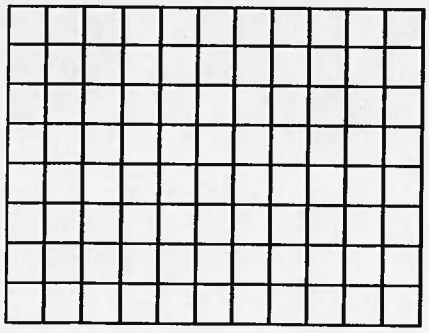


Acceleration vs Time

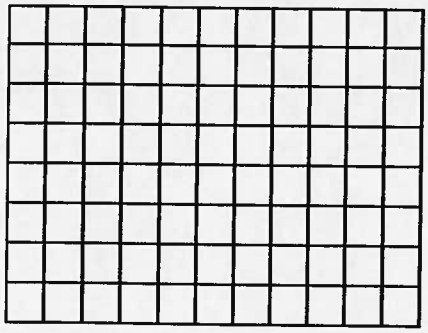


Situation #6: : Moving to the left with constant positive acceleration.
(Position +9 m, velocity -5 m/s, acceleration +1 m/s^2)

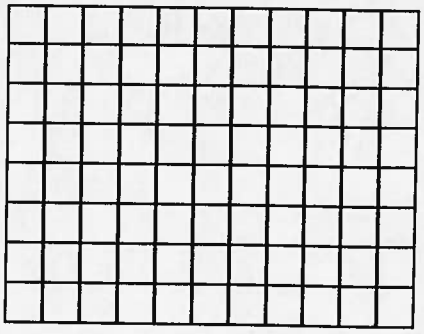
Distance Vs Time



Velocity vs Time



Acceleration vs Time



Summary: Refer to graphs for answers

1. On a distance time graph:
   a. a straight line with No slope illustrates what type of motion? _____
   b. a straight line with Positive slope illustrates what type of motion? _____
   c. a straight line with Negative slope illustrates what type of motion? _____
   d. an upward curve pattern illustrates what type of motion? _____
   e. a downward curve pattern illustrates what type of motion? _____

2. On a Velocity-Time graph:
   a. Straight line with no slope illustrates what type of motion? _____
   b. Straight line with a positive slope illustrates what type of motion? _____
   c. Straight line with a negative slope illustrates what type of motion? _____

3. What does negative acceleration do to an object moving to the right? _____

4. What does zero acceleration do to an object
   a. at Rest? _____
   b. that is moving? _____

5. What are the two types of motion that result from zero acceleration?
   a. _____ b. _____

6. Stepping on the brakes of a moving car produces what type of acceleration? _____