

Describing Motion with Graphs.

Objective: To relate line graphs to motion and motion to line graphs.

Part I. Position vs. Time Graphs

Question/Task:

1.a. What is the average speed of the graph to the right?

1.b. Based on the graph to the right, describe the behavior of the object.

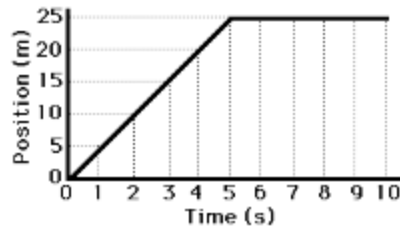
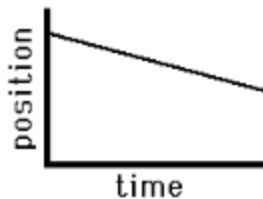
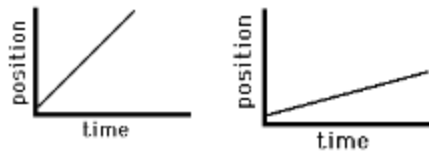
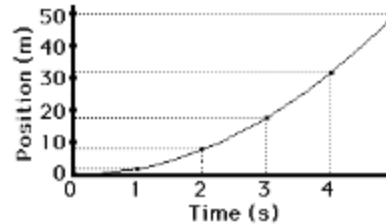
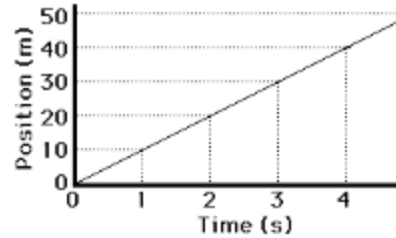
2. Based on the graph to the right, describe the behavior of the object.

3. Circle the graph to the right that indicates the object that is moving the fastest.

4. Based on the graph to the right, describe the behavior of the object.

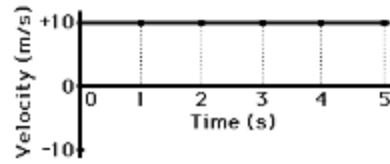
5. Based on the graph to the right, describe the behavior of the object.

Graph:

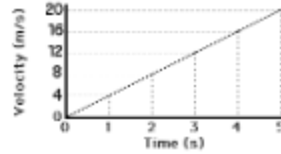


Part II. Velocity vs. Time Graphs

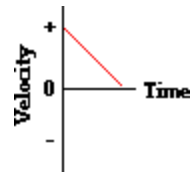
6. Based on the graph to the right, describe the behavior of the object.



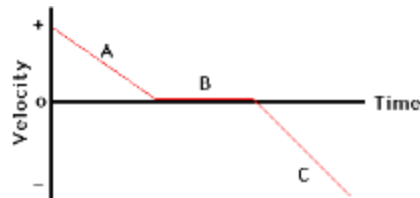
7. Based on the graph to the right, describe the behavior of the object.



8. Based on the graph to the right, describe the behavior of the object.



9. Based on the graph to the right, describe the behavior of the object.



Part III. Create your own graphs!

Important: Graphs should include labels for parts a-e, axes (time, distance, velocity), units (seconds, meters,m/s), and titles.

Graph 1. On a piece of graph paper, draw and label a **displacement versus time** graph of an object that behaves as follows:

- a. moves forward at a constant speed 2m for 4s
- b. remains still for 2s
- c. moves backward at a constant speed 1m for 2s
- d. remains still for 2s
- e. accelerates forward 1m for 2s

Graph 2 On a piece of graph paper, create a graph using the following information.

Time (s)	Displacement (m)
0	0
2	1
4	2
6	6
8	6
10	5
12	3

Answer the following questions for *Graph 2*

1. When is the object at rest?
2. What is the total distance of the object?
3. What is the displacement of the object?
4. During which time period is the object at rest?
5. During which time period is the object moving the fastest (greatest speed/velocity)?

Please make sure you name is on your graph paper and please attach the graphs to this assignment! :)