

# Interpreting Motion Graphs

Mr. Sudbury

## Interpreting Motion Graphs

**Distance vs. Time**

A distance (y) versus time (x) graph has a line that represents velocity.

1. Calculate the speed during segment A.
2. Calculate the speed during segment B.
3. Calculate the speed during segment C.
4. What is the  $V_{avg}$  for the entire 50 seconds?
5. What can be said about the speed on a distance vs. time graph when comparing different slope.

## Interpreting Motion Graphs

6. What does line D on the distance vs. time graph show?
7. Which line represents an object that is not moving?
8. Calculate the  $V_{avg}$  for line F.
9. Draw a line on the graph that starts at (0,0) and has a velocity of 1.0 m/s for 20 seconds and changes velocity to 2 m/s from 20 seconds to 50 seconds.

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A position(y) vs. time(x) graph is the same as a distance vs. time graph.

10. Which segment represents the slowest velocity?
11. Which segment represents the fastest velocity?
12. List the segments from slowest to fastest.
13. The overall line on this position vs. time graph shows: \_\_\_\_\_

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**Velocity vs. Time**

A Velocity (y) vs. Time (x) graph shows the  $\Delta V + t$  (AKA acceleration).

14. What is the velocity where segment A meets segment B?
15. Calculate the acceleration for segment A.
16. Calculate the acceleration for segment C.
17. Calculate the acceleration for segment D.
18. Is the object moving at segment C? (Does segment C represent no motion or constant velocity?)

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19. Use the last graph to complete the table:

	$V_i$	$V_f$	$\Delta V$	$\Delta t$	Accel.
Line A					
Line B					
Line C					
Line D					

20. What does the line on a Velocity vs. Time graph represent?