

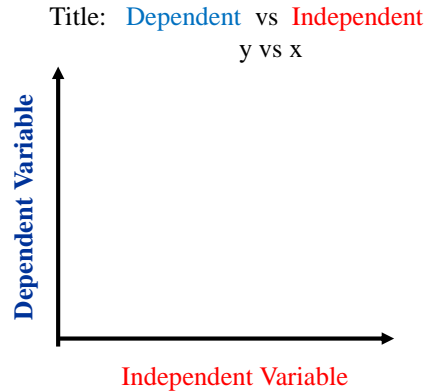
Reviewing Graphing

Independent variable

- Manipulated variable
- Factor adjusted by experimenter

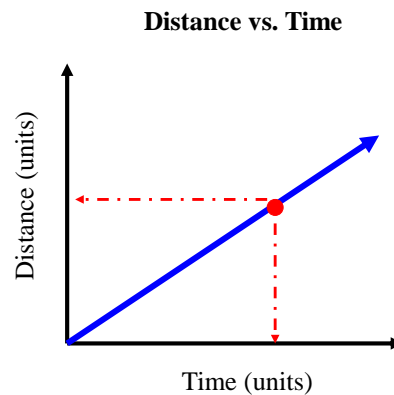
Dependent Variable

- Responding variable
- Depends on the independent variable
- Variable that is expected to change



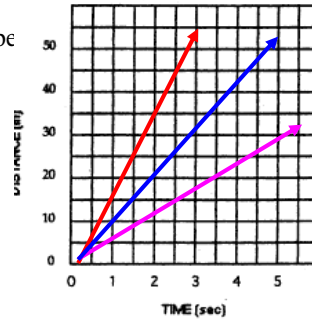
Graphing Motion

- To show the motion of an object on a line graph
 - plot distance against time.
 - Time is on the horizontal, or x-axis.
 - Distance is shown on the vertical, or y-axis.
- A point (x,y) on the graph represents the location of an object at a particular time.

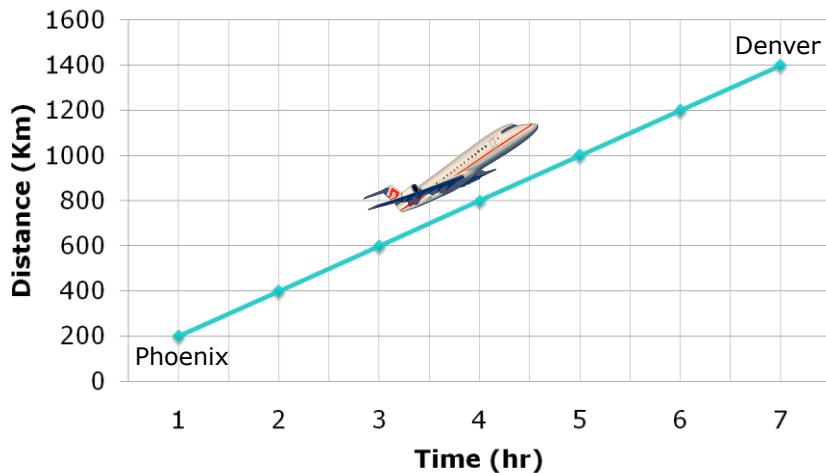


Graphing Motion

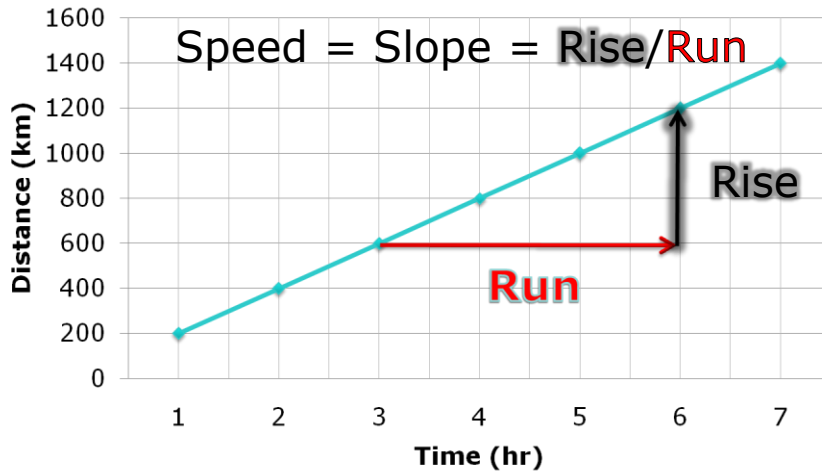
- The steepness, or slant, of a line on a graph is called its **slope**.
 - A distance-time graph with a constant slope represents motion at a constant speed
- The slope tells you how fast one variable changes in relation to the other variable.
 - Slope tells you the rate of change
 - SPEED!
 - The slope of a distance-time graph represents speed.
- The faster the motion, the steeper the slope
 - Because the object moves a greater distance in a given amount of time.
- A slight slope (not as steep) means a lower speed



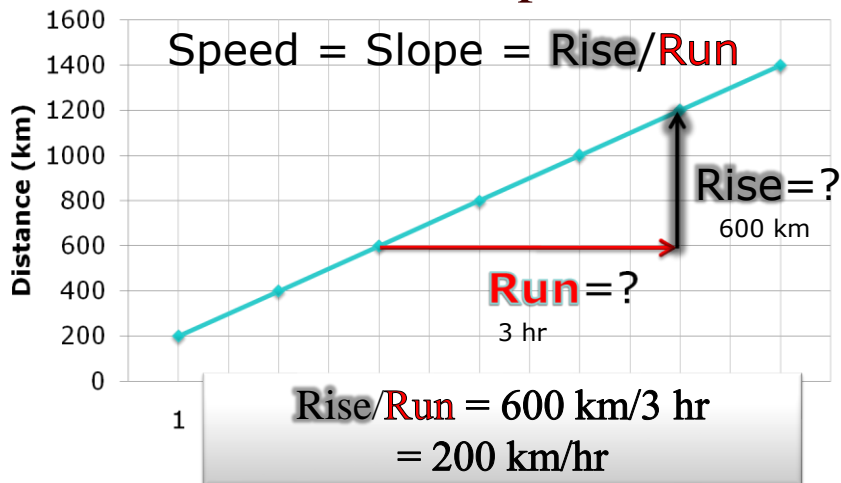
Graphing Speed: Distance vs. Time Graphs



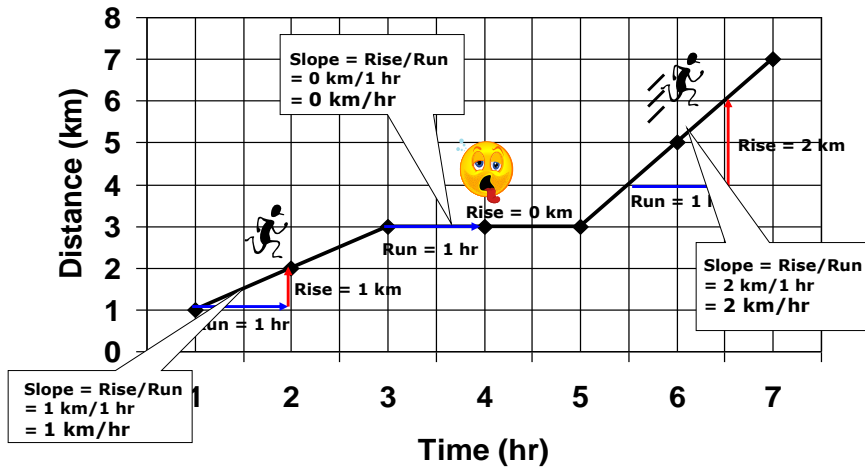
Graphing Speed: Distance vs. Time Graphs



Graphing Speed: Distance vs. Time Graphs

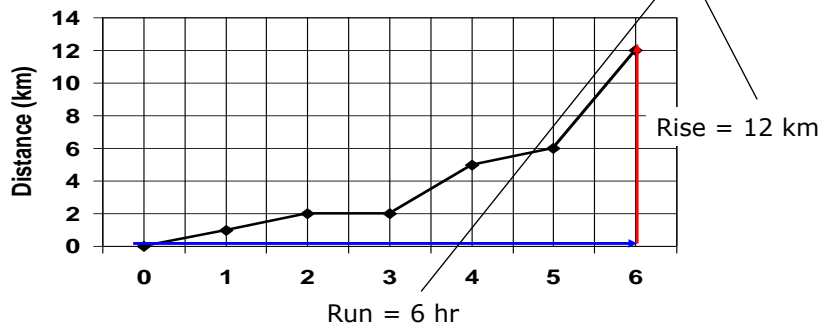


Different Slopes



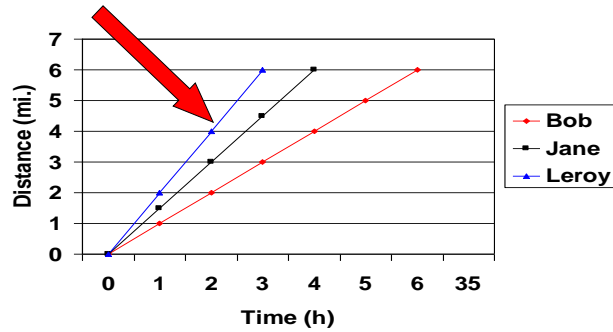
Question

Average Speed = Total distance/Total time = 12 km/6 hr
= **2 km/hr**



Question

- Below is a distance vs. time graph for 3 runners. Who is the fastest?



Leroy is the fastest. He completed the race in 3 hours