Wednesday, February 13, 2019

Your Learning Goal: After students experienced speed in the zipline engineering challenge, they will be able to describe how different speeds look on a graph with 100% accuracy.

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Speed Graphs- 32L + R

Catalyst (32L): Use Speed = Distance/Time to answer the following word problems

Homework:

Tortoise and the Hare

Agenda:

1. Catalyst
2. Notes
3. Tortoise and the Hare

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2/6/19	How Fast Is Fast?	31 L + R
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26R

Catalyst:

Use **Speed = Distance/Time** to answer the following word problems:

1. Ms. Salzburg had to run west to get home. It took her 2 minutes to run 100 meters. What is her speed?

2. What is Ms. Salzburg's average speed if she then took a 1 minute break and ran another 100 meters in 1 minute?

32L

2/13/19

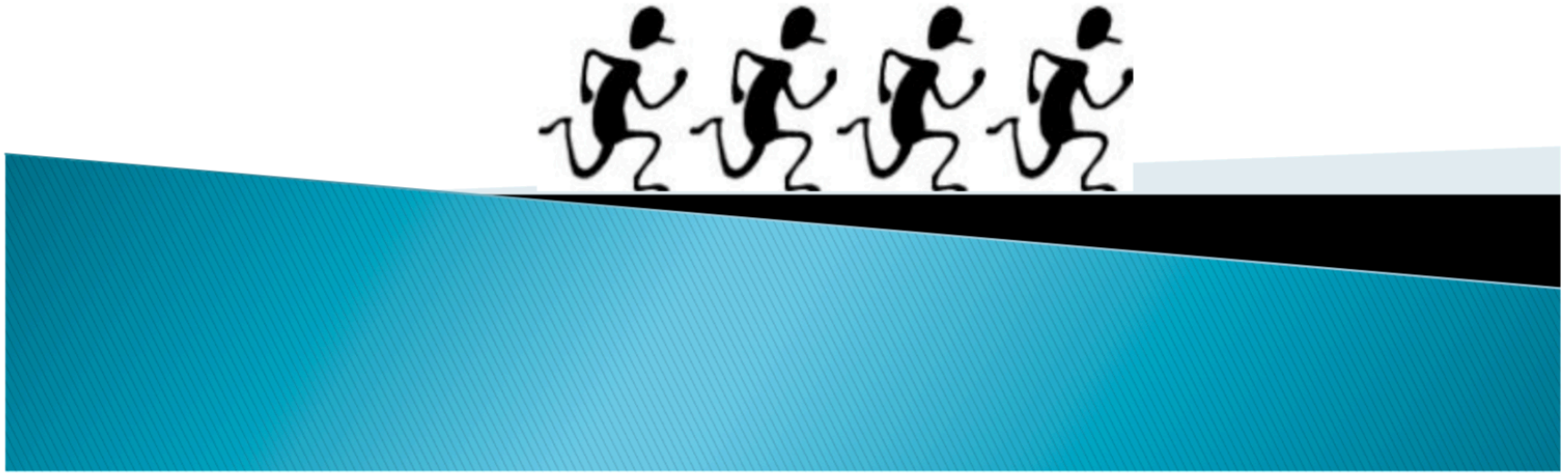
Speed Graphs

Type of Graph	Picture
Constant (same) speed	
Increasing speed	
Decreasing speed	
Stationary (No speed; Stopped)	
Moving back to the beginning	

32R

GRAPHING MOTION

How to graph and interpret motion



Distance vs. Time Graph

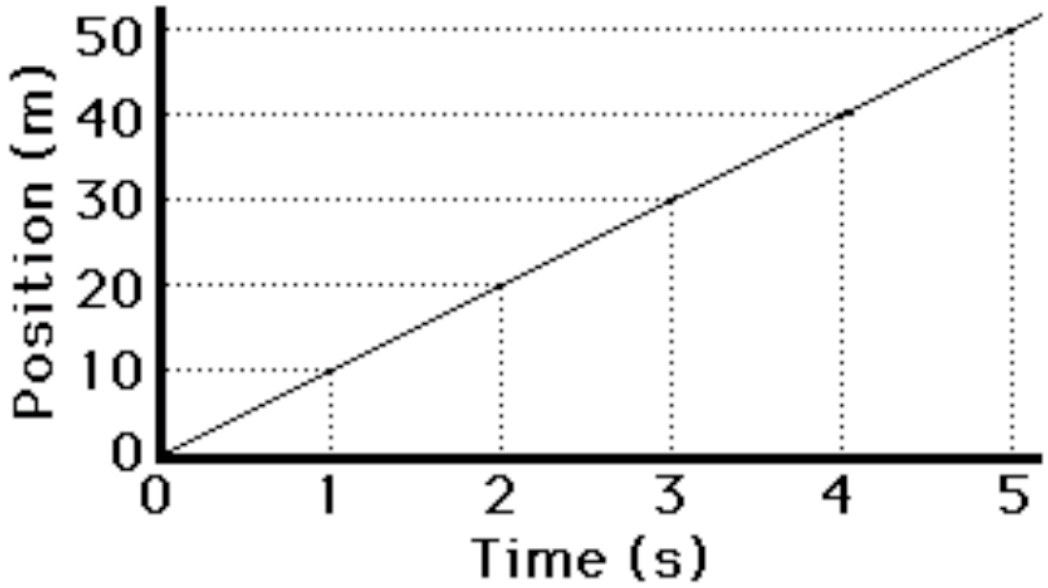
- **Speed** = change in distance
  change in time

- To find speed from the graph, measure the change in distance and divide by the change in time

- This change is called the slope in math, SO SLOPE on a graph tells you the SPEED

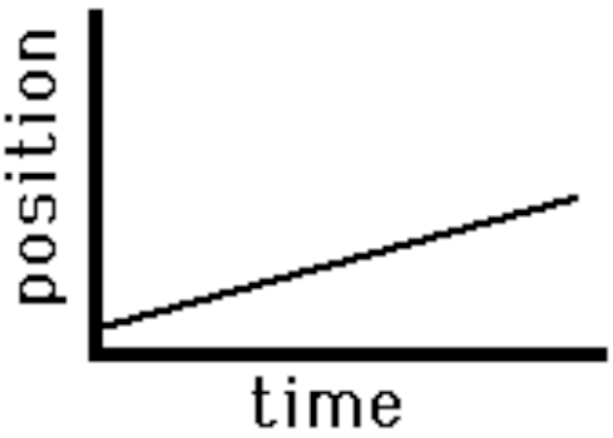
Constant Speed Graph

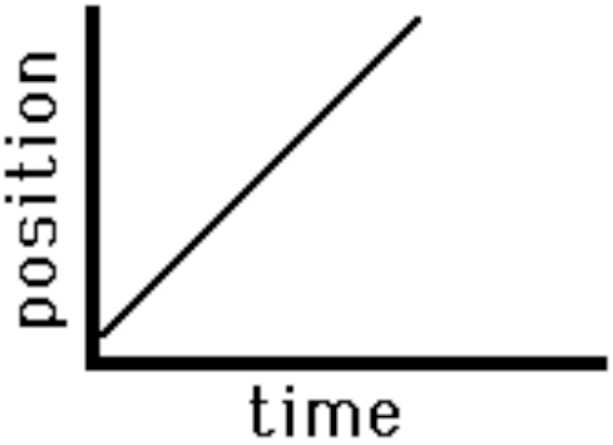
- If the line is **straight** (no change in slope), that means the object is moving at constant speed.
- (Write the description and draw the image below)



Constant Speed Graph

- The **steeper** the line, the **faster** an object is going





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32L

2/12/19

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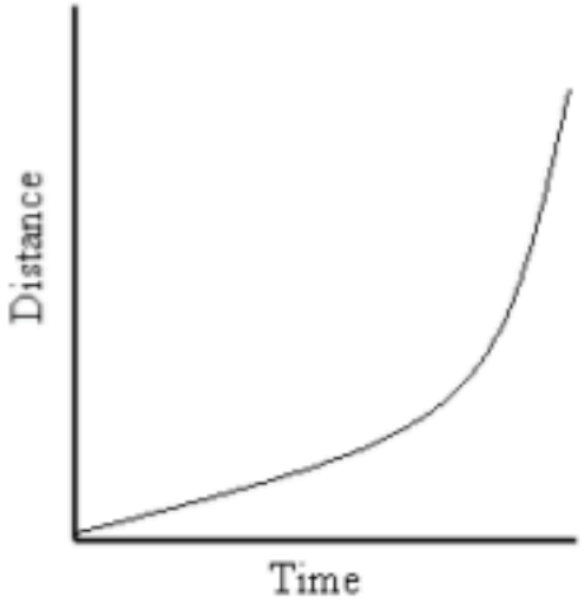
32R

Increasing Speed Graph

- If the line on the graph is getting **steeper**, speed is increasing.
- (Write the description and draw the image below)



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32L

2/12/19

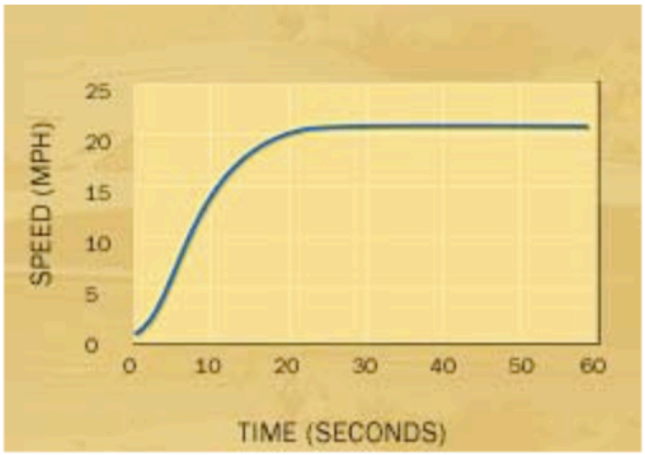
Speed Graphs

Type of Graph	Picture
Constant (same) speed	
Increasing speed	If the line on the graph is getting **steeper**, speed is increasing.
Decreasing speed	
Stationary (No speed; Stopped)	
Moving back to the beginning	

32R

Decreasing Speed Graph

- If the line on the graph is getting **less steep**, the speed is decreasing. (Write the description and draw the image below)



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32L

Speed Graphs

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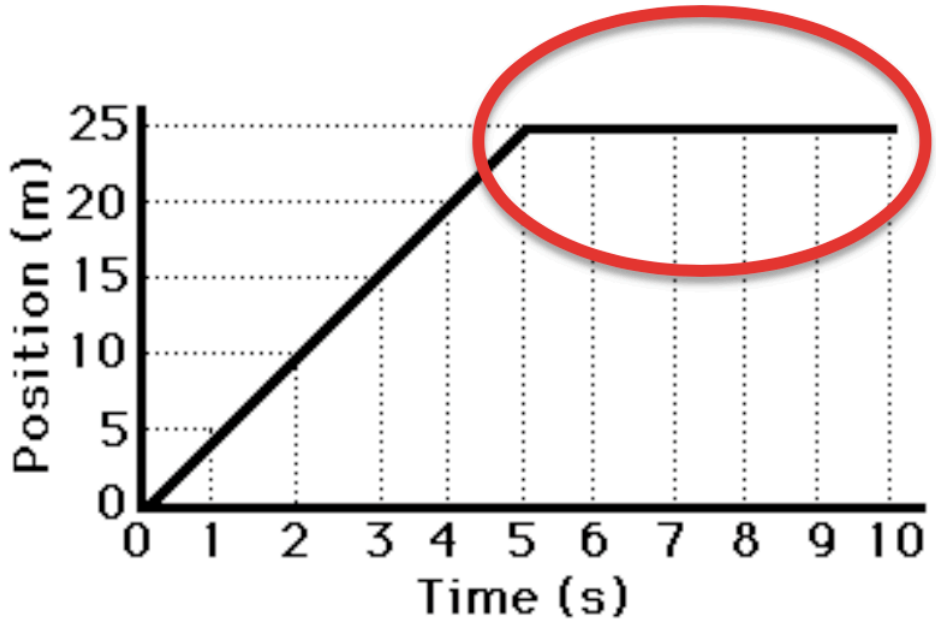
Increasing speed	
Decreasing speed	If the line on the graph is getting **less steep**, the speed is decreasing.
Stationary (No speed; Stopped)	
Moving back to the beginning	

32R

Stationary Speed Graph

- If the line goes **flat**, the object has stopped moving. (Write the description and draw the image below)



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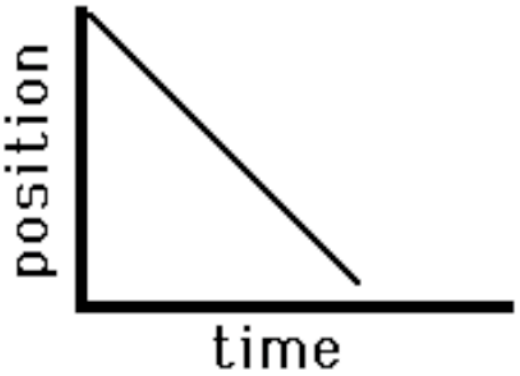
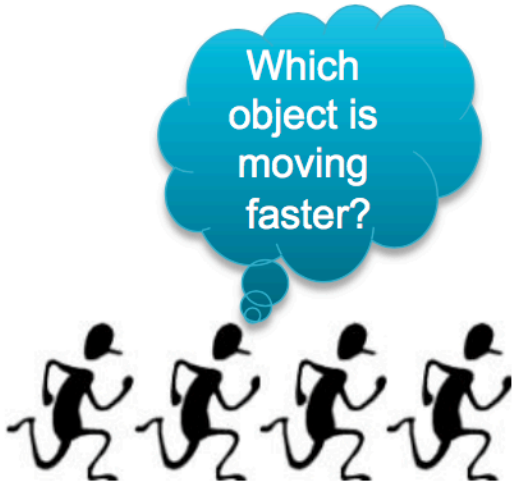
32R

Change in Direction

- When the graph has **negative slope**, the object is moving back towards the start. (Write the description and draw the image below)





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Decreasing speed	
Stationary (No speed; Stopped)	
Moving back to the beginning	When the graph has **negative slope**, the object is moving back towards the start

32R

Please complete with notes & pictures

Type of Graph	Picture
Constant (same) speed	
Increasing speed	
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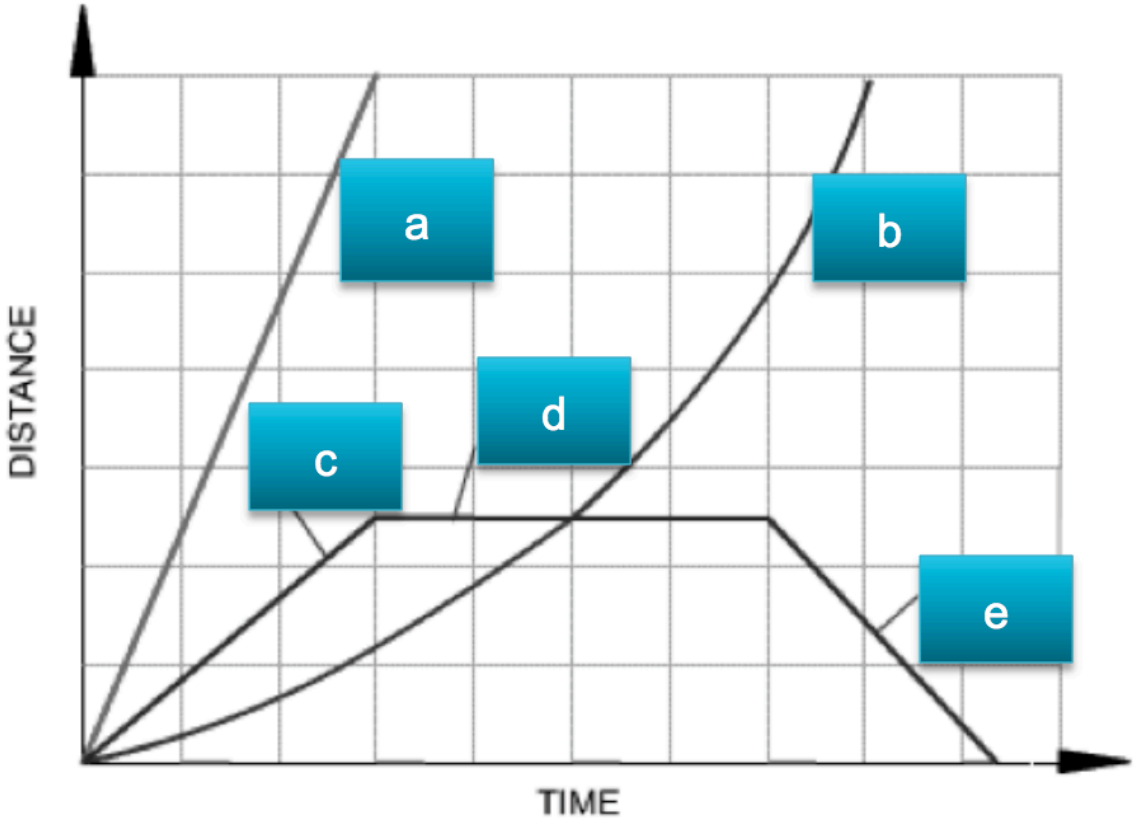
Describe the motion in each part of the graph with those at your table:



Reflection

1. What does the slope of a Distance vs. Time Graph tell you? *Explain* how you know.
2. Sketch a simple graph of the following situation: A student runs to class because she is late. She stops for a moment to talk to her P.E. teacher. She then walks the rest of the distance to her next class.
3. Ms. Salzburg ran 3 miles, biked 2 miles, and swam 1 mile. It took her 1 hour to do each activity. Find the average speed.