🛼🛼 Moving Straight Ahead - Rollerblading

Objective:

Identify if a relationship is linear from a table, graph, or equation.

Vocabulary:

Constant Rate of Change: _____

Linear Relationship: _____

Part 1:
   a) Please go to https://phet.colorado.edu/en/simulation/graphing-lines and click on "Graphing Lines". Then click on the "Slope-Intercept" section.
   b) Take a few minutes to explore the application, be ready to share some information you noticed while using the tools. Write down three observations below:
      ○
      ○
      ○

Part 2:

Mr. Cliff's class decides to participate in a Rollerblade - A - Thon. Each rollerblader must find their rollerblading rates. The rollerbladers must represent their travel rates in yards per second.

Here are the rollerblading rates that Giovanna, Mark, and Jose found in their experiment.

Names:	Rollerblade Rate:
Giovanna	1 yard per second
Mark	1.5 yards per second
Jose	2 yards per second

1. Make a table showing the distance traveled by each student for the first ten seconds. How does the traveling rate appear as a **pattern** in the table?

	0 sec	1 sec	2 sec	3 sec	4 sec	5 sec	6 sec	7 sec	8 sec	9 sec	10 sec
Giovanna											
Marc											
Jose											

Part 3:

2. a) Use the PHET - Graphing Lines Application: Graph the times (x-axis) and distances (y-axis) for the three students on the same coordinate plane. Once you complete one line, click the "save the line" button and start the next line.

b) How does the **steepness** of the line and the yards per second (Rate of Change) relate to each other?

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Name:_____

Part 4:

3. Write an equation for each student. Let *t* represent time and the *d* represent distance traveled for each student.

Names:	Rate of Change	Equations:
Giovanna		
Mark		
Jose		

4. Are any of these proportional relationships? If so, what is the constant of proportionality?

Names	Proportional or Nonproportional	How do you know?
Giovanna	☐ Proportional or ☐ Non-Proportional	
Mark	☐ Proportional or ☐ Non-Proportional	
Jose	☐ Proportional or ☐ Non-Proportional	

Part 5:

5. Diana has just signed up for the Rollerblade - A -Thon. The image below is a graph that shows her yards per second. Determine her **rate of change** on the graph.
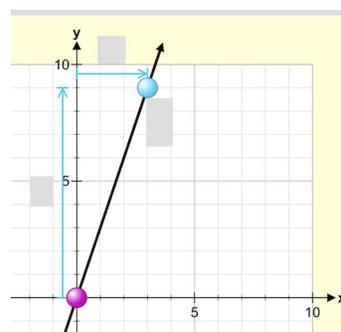
Diana: _____

6. What could happen so that Diana can be at the same distance as Jose after 2 seconds?
 Use the ordered pair tool and place it over the yards were they are the same during 2 seconds.

Ordered Pair Tool

7. Discover how many yards each person can travel for each amount of time:

	1 min (60 seconds)	30 Seconds	10 min	1 hour
Giovanna				
Mark				
Jose				