

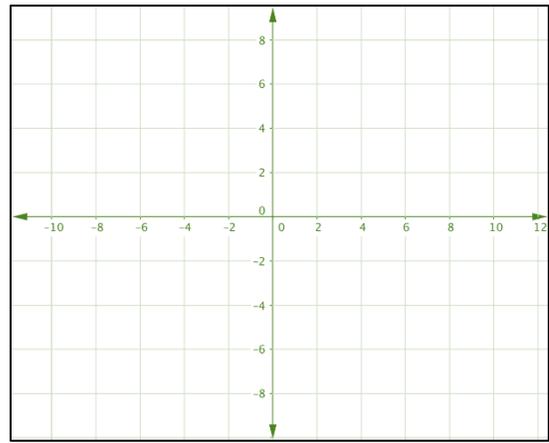
**Practice Quiz 3 - Systems of Equations by Graphing**

1. Consider the following system of equations.  $\begin{cases} 3x + y = 6 \\ 3x - y = 6 \end{cases}$

Part A: Graph the system of equations.

Part B: What is the solution to the system of equations?

Part C: Explain how you know it is the solution.



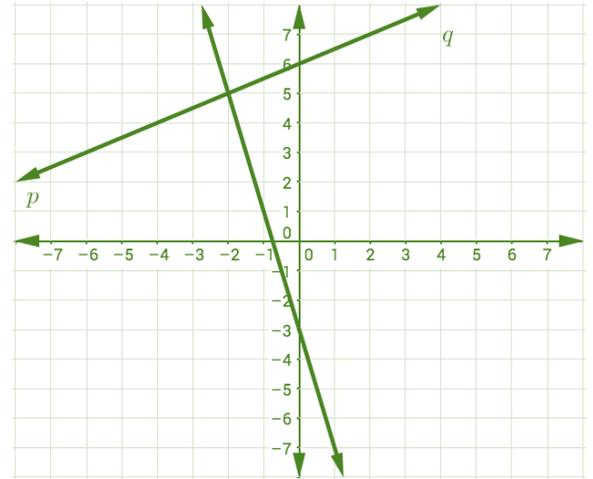
2. The graph at right shows a system of equations.

Part A: Write the equation of each line in slope-intercept form.

**Line P:**

**Line Q:**

Part B: What is the solution to the system?



3. Last Monday, two law students met up at *Bigby* after school to read the pages they were assigned in the Legal Methods class. Taylor can read 1 page per minute, and he has read 28 pages so far. Tajah, who has a reading speed of 2 pages per minute, has read 12 pages so far.

Part A: Define the variables and write two equations to represent the number of pages that each student read.

**Variables:**

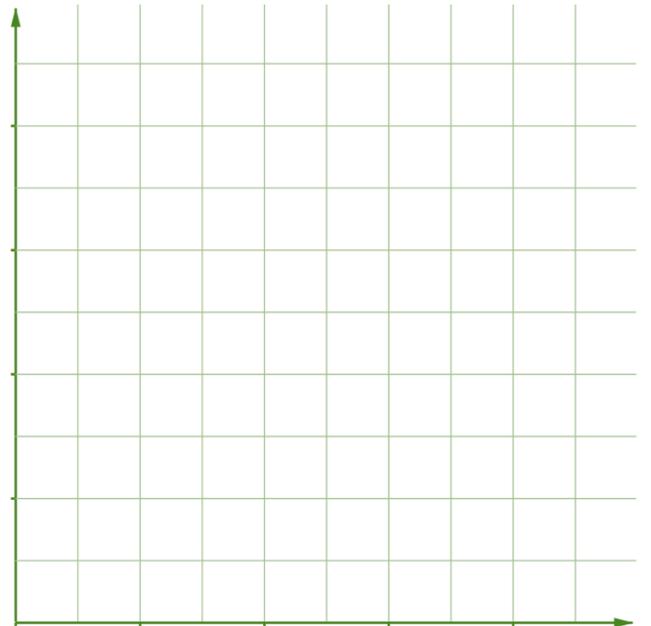
**Taylor:**

**Tajah:**

Part B: Represent the two equations on the graph.

Part C: What is the rate of change for each student?

Part D: What does the rate of change represent in this situation?



Part E: What are the y-intercepts for Taylor and Tajah? What do they represent?

Part F: Give an example when Taylor has read more pages than Tajah. Justify your answer.

Part G: When will Taylor and Tajah have read the same number of pages?

4. Consider the following system of equations.  $\begin{cases} 2x - y = -3 \\ -6x - 2y = -6 \end{cases}$

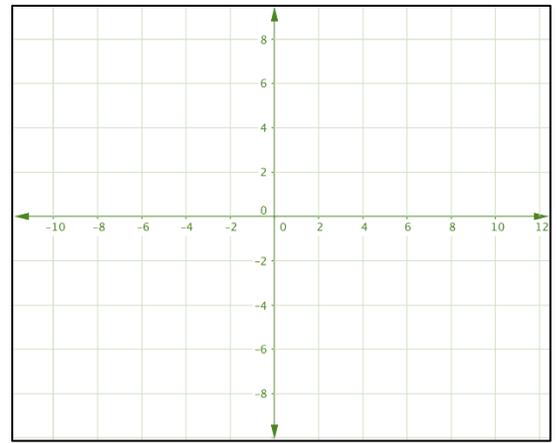
Part A: Is (0, 3) a solution to the first line? Explain your answer.

Part B: Is coordinate (0, -3) is a solution to Line 2?

Part C: What are the slopes of Line 1 and Line 2?

Part D: What are the y-intercepts of Line 1 and Line 2?

Part E: Sketch the graph of Line 1 and Line 2. Part F: What is the solution to the system?



5. Parabola Skate Rentals rents skate boards for \$4.50 per hour with a rental fee of \$35. Arc of Hawk Skate Rental rents skate boards for \$5.25 per hour with a rental fee of \$25.

Part A: Define the variables and write two equations to represent each rental.

**Variables:**

**Parabola:**

**Arc of Hawk:**

Part B: Represent the two equations on the graph.

Part C: What is the rate of change for each rental company?

**Parabola:**

**Arc of Hawk:**

Part D: What does the rate of change represent in this situation?

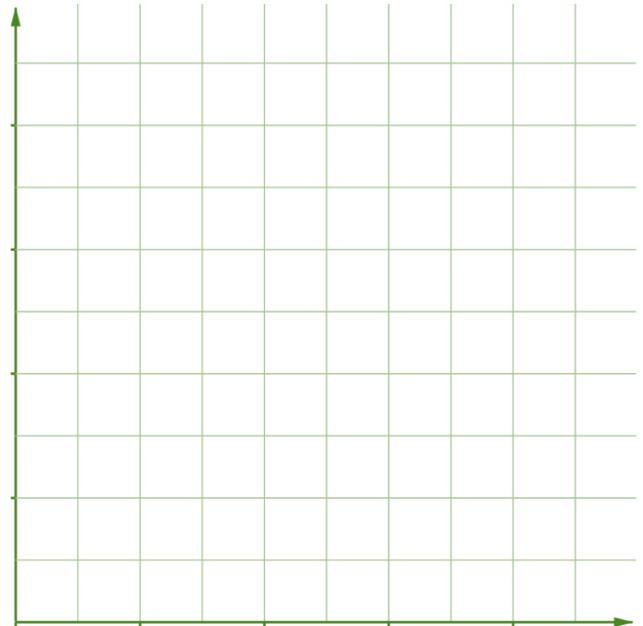
Part E: What are the y-intercepts of each graph and what do they represent?

**Parabola:**

**Arc of Hawk:**

Part F: Give an example when renting from Parabola would be a better deal than renting from Arc of Hawk. Justify your answer.

Part G: When will the two skate board rentals cost the same amount?



6. Consider the following system. 
$$\begin{cases} x - y = 9 \\ 3x + 3y = 3 \end{cases}$$

Part A: The ordered pair (3, -6) is a solution to **(circle one)**

*Line 1 - Line 2 - the system of equations*

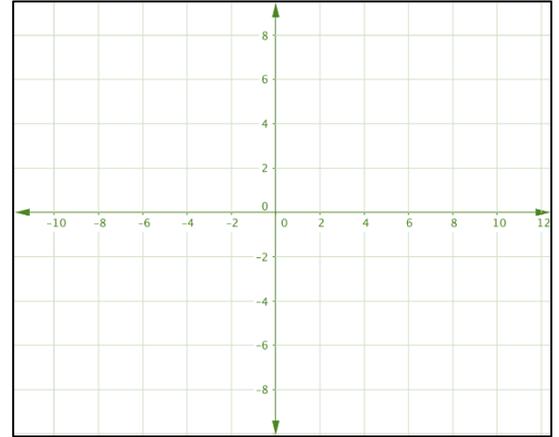
Part B: The ordered pair (-1, 1) is a solution to **(circle one)**

*Both - Neither - the system of equations*

Part C: The ordered pair (5, -4) is a solution to **(circle one)**

*Line 1 - Line 2 - the system of equations*

Part D: Sketch the graph of the system.



7. Consider the following system. 
$$\begin{cases} x + y = -2 \\ 3x - y = 2 \end{cases}$$

Part A: The ordered pair (-4, 2) is a solution to **(circle one)**

*Line 1 - Line 2 - the system of equations*

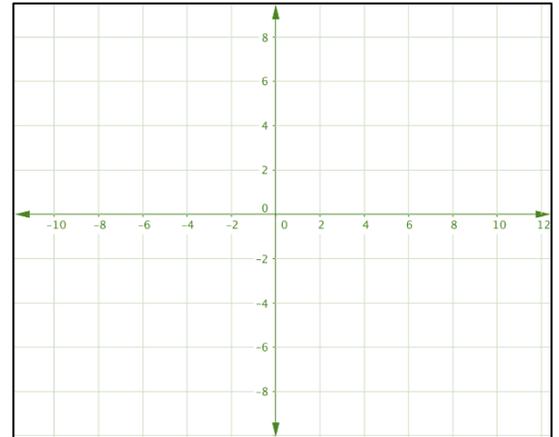
Part B: The ordered pair (2, 4) is a solution to **(circle one)**

*Both - Neither - the system of equations*

Part C: The ordered pair (0, -2) is a solution to **(circle one)**

*Line 1 - Line 2 - the system of equations*

Part D: Sketch the graph of the system.



8. You are trying to decide which cell phone plan to purchase. Plan A charges \$40 for a new phone and \$20 a month for usage. Plan B provides the phone for free, but has a fee of \$30 a month for usage.

Part A: Write an equation to represent each plan.

**Plan A:**

**Plan B:**

Part B: Represent the two plans on the graph.

Part C: When will the two plans cost the same amount?

