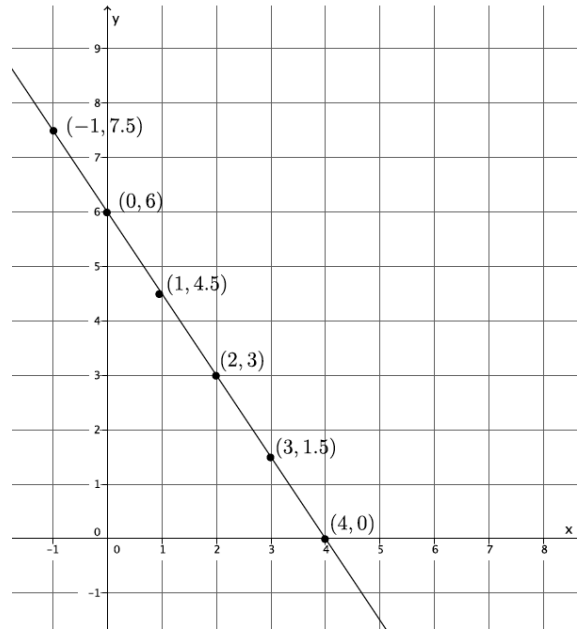


Name _____

Date _____

1. Use the graph below to answer parts (a)–(c).



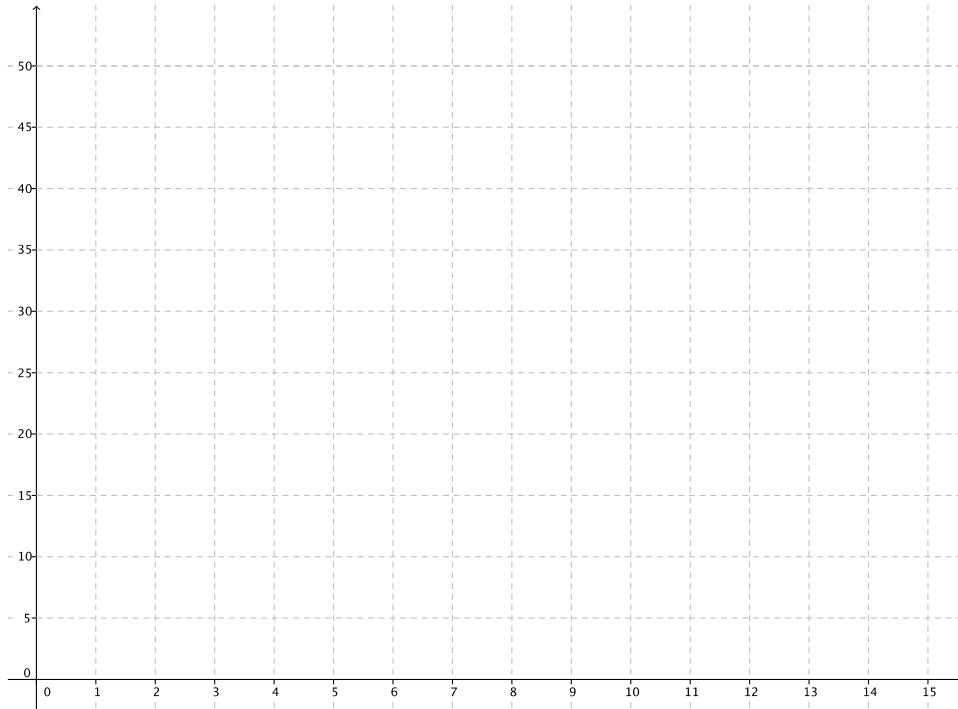
- a. Use any pair of points to calculate the slope of the line.
- b. Use a different pair of points to calculate the slope of the line.
- c. Explain why the slopes you calculated in parts (a) and (b) are equal.

2. Jeremy rides his bike at a rate of 12 miles per hour. Below is a table that represents the number of hours and miles Kevin rides. Assume both bikers ride at a constant rate.

Time in hours (x)	Distance in miles (y)
1.5	17.25
2	23
3.5	40.25
4	46

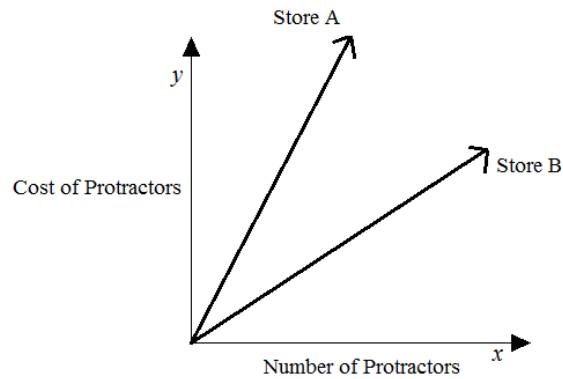
- a. Which biker rides at a greater speed? Explain your reasoning.
- b. Write an equation for a third biker, Lauren, who rides twice as fast as Kevin. Use y to represent the number of miles Lauren travels in x hours. Explain your reasoning.

- c. Create a graph of the equation in part (b).



- d. Calculate the slope of the line in part (c) and interpret its meaning in this situation.

3. The cost of five protractors is \$14.95 at Store A. The graph below compares the cost of protractors at Store A with the cost at Store B.



Estimate the cost of one protractor at Store B. Use evidence from the graph to justify your answer.

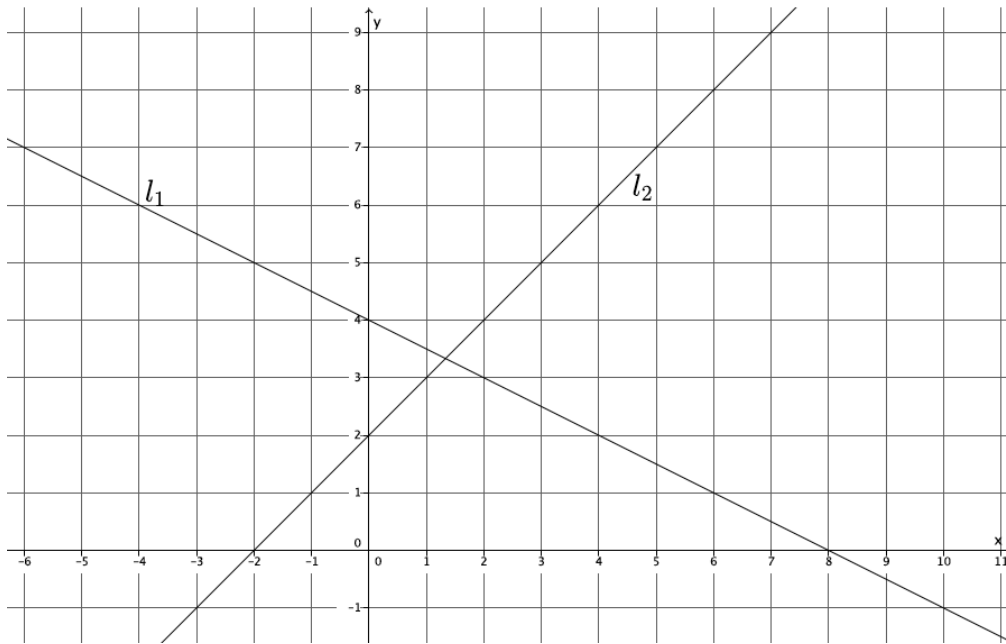
4. Given the equation, $3x + 9y = -8$, write a second linear equation to create a system that:
- Has exactly one solution. Explain your reasoning.
 - Has no solution. Explain your reasoning.
 - Has infinitely many solutions. Explain your reasoning.
 - Interpret the meaning of the solution, if it exists, in the context of the graph of the following system of equations.

$$\begin{cases} -5x + 2y = 10 \\ 10x - 4y = -20 \end{cases}$$

5. Students sold 275 tickets for a fundraiser at school. Some tickets are for children and cost \$3, while the rest are adult tickets that cost \$5. If the total value of all tickets sold was \$1,025, how many of each type of ticket was sold?

6. a. Determine the equation of the line connecting the points $(0, -1)$ and $(2, 3)$.
- b. Will the line described by the equation in (a) intersect the line passing through the points $(-2, 4)$ and $(-3, 3)$? Explain why or why not.

7. Line l_1 and line l_2 are shown on the graph below. Use the graph to answer parts (a)–(d).



- What is the y -intercept of l_1 ?
- What is the y -intercept of l_2 ?
- Write a system of linear equations representing lines l_1 and l_2 .
- Use the graph to estimate the solution to the system.
- Solve the system of linear equations algebraically.
- Show that your solution from part (e) satisfies both equations.