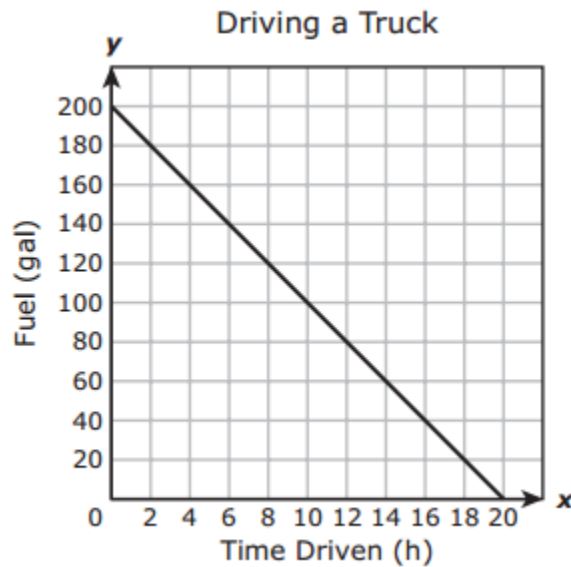


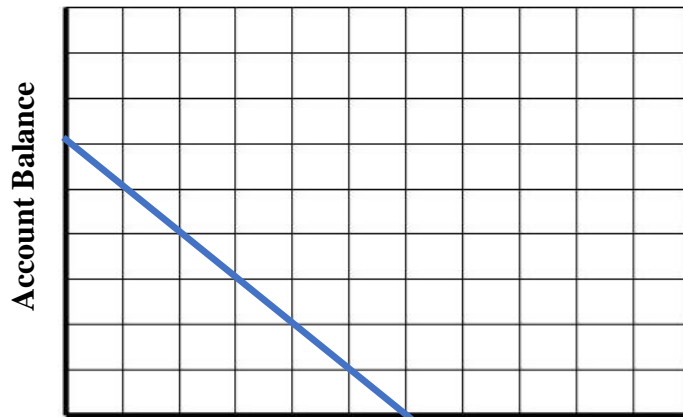
## APPLICATIONS OF PARAMETER CHANGES

The graph below shows the relationship between the number of gallons of fuel remaining in a truck and the number of hours the truck has been driven.



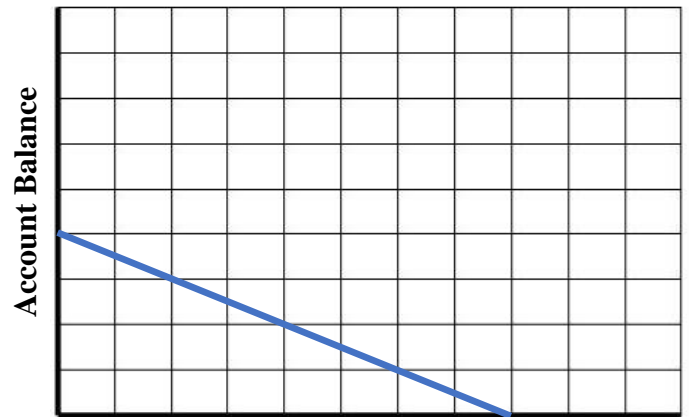
1. What is the rate of change? What does it represent?
2. What is the y-intercept? What does it represent?
3. What is the x-intercept? What does it represent?
4. Write the equation that represents the amount of fuel remaining,  $g$ , in terms of time driven,  $h$ .
5. Suppose the truck begins with 140 gallons of fuel in the tank. What would be the new equation? How would this change affect the graph?
6. Suppose the truck begins with 200 gallons of fuel but uses 40 gallons every 2 hours. What would be the new equation? How would this change affect the graph?

The graphs below show Jacob and Lewis's account balance over a period of months. Let  $A$  represent each person's balance and  $m$  represent the number of months.



Time (months)

Lewis:  
 $A = 600 - 100m$



Time (months)

Jacob:  
 $A = 400 - 50m$

7. Who began with the most money in his account? \_\_\_\_\_
8. Who is losing the most money each month? \_\_\_\_\_
9. Who has the largest x-intercept? \_\_\_\_\_ What does it represent?
10. \_\_\_\_\_ If the amount Jacob loses each week doubles, which statement is true?
  - A. Lewis and Jacob would have the same graph.
  - B. Lewis and Jacob's lines would be parallel.
  - C. Jacob's equation would become  $A = 800 - 50m$ .
  - D. Jacob's account balance would be \$0 at 3 months.
11. If Jacob started with \$600 but continues losing money at the same rate, what is his new equation?
12. If Lewis starts with the same amount of money but loses it twice as fast each month, what is his new equation? When will he run out of money?