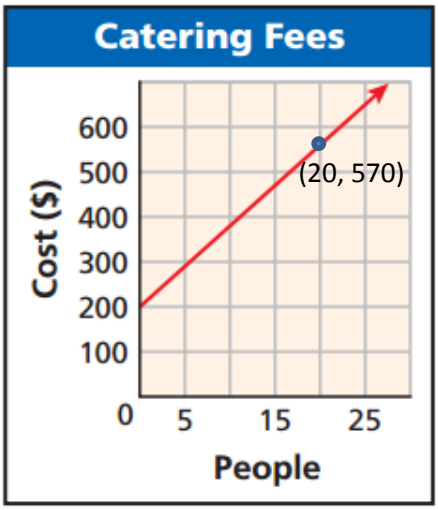
Essential Question: How can we represent a linear relationship symbolically from a graph?

Do Now:

The graph pictured to the right shows the relationship between the fees charged by a catering company and the number of people served.



a) Calculate the rate of change and identify the y-intercept. Write an equation that represents the linear relationship.

b) What is the meaning of the y-intercept and the rate of change in your equation?

c) If you have $4,000, can you hold an event for 200 guests? Justify your response.

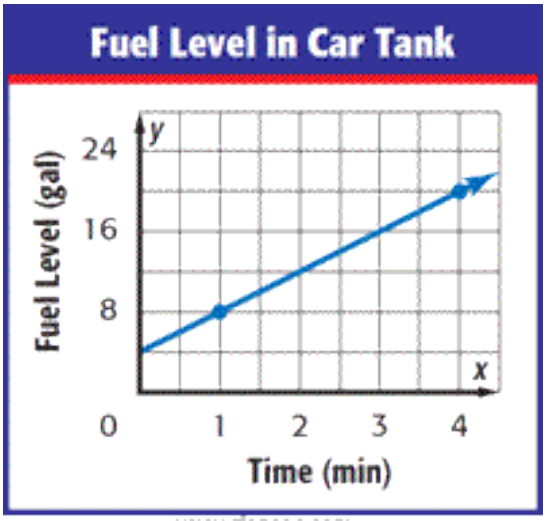
Think about this…

Linear relationships can be represented symbolically by creating an equation in two variables.

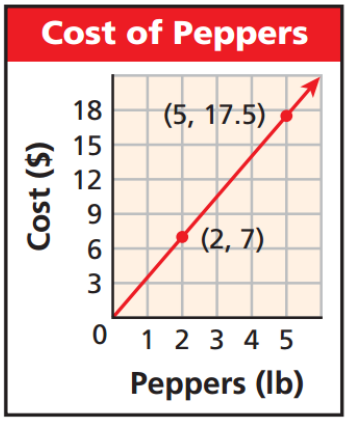
1. What does the y-intercept represent?

   What does the rate of change represent?

   Write an equation to represent the linear relationship shown by the graph.



2. Write an equation to represent the linear relationship shown by the graph. What does the y-intercept represent? What does the rate of change represent?



Interpreting X and Y-Intercepts of a Graph

3. The graph below shows the relationship between time and miles as Josh leaves his cousin's house to travel home.

a) Identify the y-intercept of the graph.
What does it tell us in the context of this situation?

b) Identify the x-intercept of the graph.
What does it tell us in the context of this situation?

c) Use the intercepts to calculate the rate of change.
What does the rate of change tell us in the context of this situation?

d) Write an equation that represents the linear relationship shown by the graph.

e) Using your equation, determine how long Josh has been driving when he is 52 miles from home.

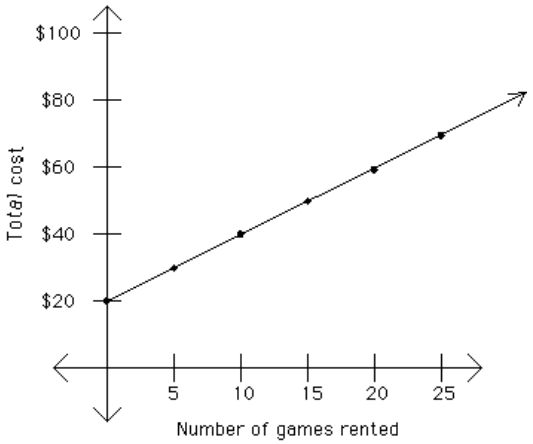
The TAKEAWAY

We can represent linear relationships displayed on a graph symbolically by identifying the

_____ and calculating the _____.

8 Algebra CC **HW #**

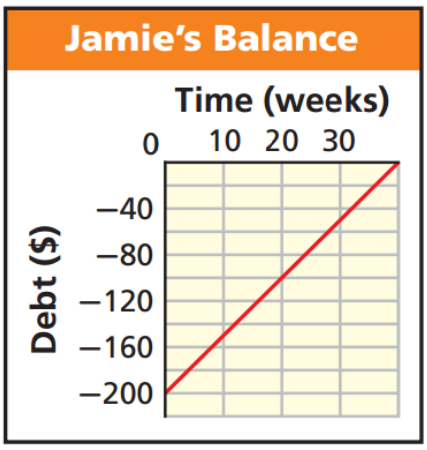
1) The graph pictured below represents the total cost of renting video games from a video game store that specializes in renting vintage video games that uses vintage systems such as Atari and Nintendo. Any person wishing to rent a video game must acquire a membership from the store.



a) Write an equation that represents the linear relationship. Explain the meaning of the rate of change and the y-intercept.

b) In this graph, the points are connected to form a line. Do you think it makes sense to connect the points? Explain.

2) Analyze the graph below and complete a - c.



a) Identify the y - intercept. What does it represent?

b) Identify the x-intercept. What does it represent?

c) Using the intercepts, write an equation that represents the linear relationship. Explain the meaning of the rate of change.