

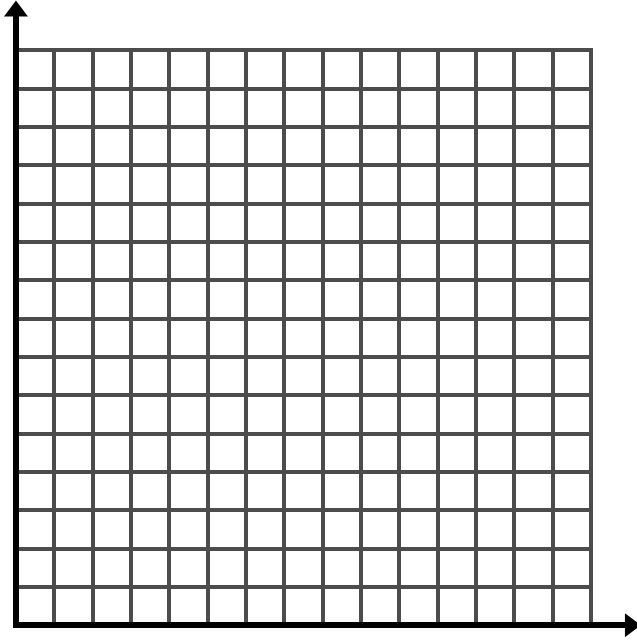
Class Activity: Representations of a Linear Context

Issued 11.8.19 DUE: 11.13.19 (at beginning of class)

NOTE: Incomplete work will be returned to students.**This is your first grade of Trimester 2.**

1. Courtney is collecting coins. She has 2 coins in her collection to start with and plans to add 4 coins each week.

- a. Complete the table and graph to show how many coins Courtney will have after 6 weeks.



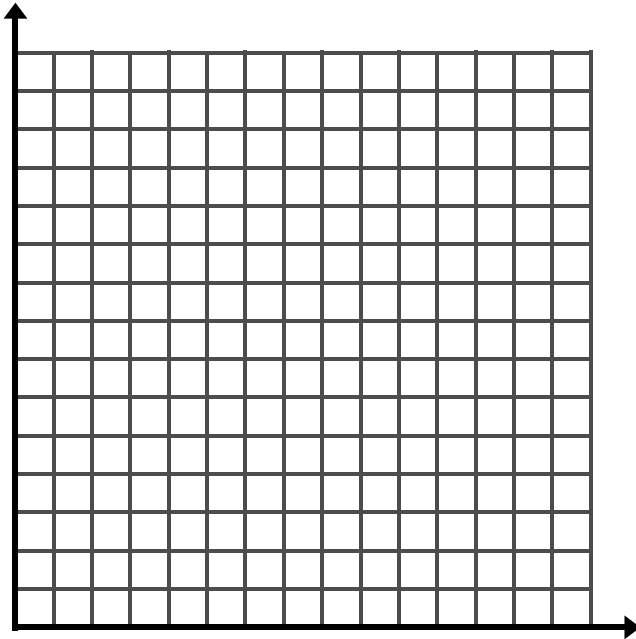
<i>Time (weeks)</i>	<i># of Coins</i>
0	
1	
2	
3	
4	
5	
6	

- b. Write an equation for the number of coins c Courtney will have after w weeks.

- c. Is this context linear? Use evidence from the context, graph, table, and equation to support your answer.

2. Jack is filling his empty swimming pool with water. The pool is being filled at a constant rate of four gallons per minute.

a. Complete the table and graph below to show how much water will be in the pool after 6 minutes.



<i>Time (minutes)</i>	<i>Amount of Water (gallons)</i>
0	
1	
2	
3	
4	
5	
6	

b. Write an equation for the number of gallons g that will be in the pool after m minutes.

c. Is this context linear? Use evidence from the context, graph, table, and equation to support your answer.

d. Compare this swimming pool problem to the previous problem about coins. How are the problems similar? How are they different?

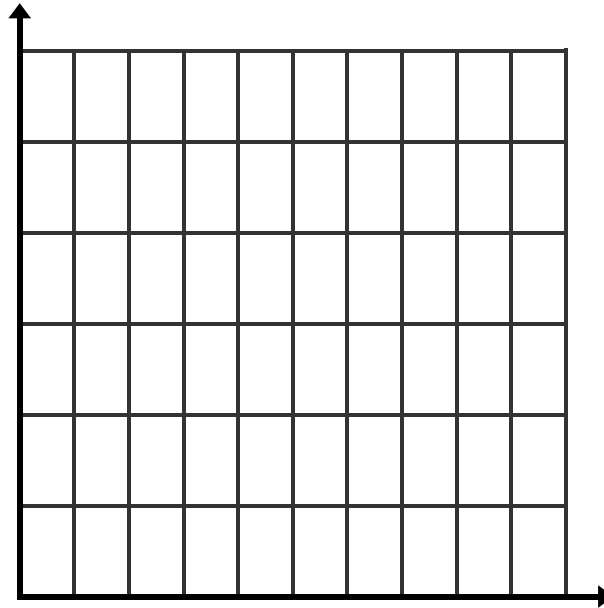
e. How would you change the coin context so that it could be modeled by the same equation as the swimming pool context?

f. How would you change the swimming pool context so that it could be modeled by the same equation as the coin context?

3. An airplane is at an elevation of 3000 ft. The table below shows its elevation(y) for every 2 miles(x) it travels.

<i>Miles</i>	<i>Elevation</i>
0	3000
2	2000
4	1000

- a. Complete the graph to show how many miles it will take for the airplane to reach the ground.



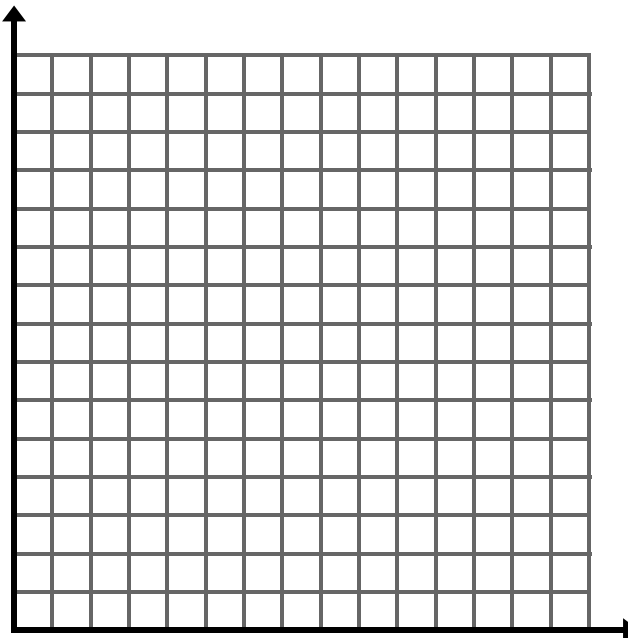
- b. Use the table and the graph to find the rate of change.
- c. Write an equation that represents this relationship
- d. Explain the how equation can be used to determine how many miles it will take for the plane to reach the ground.

Representations of a Linear Context

1. Hillary is saving money for college expenses. She is saving \$200 per week from her summer job. Currently, she does not have any money saved.

a. Complete the table and graph to show how much money Hillary will have 6 weeks from now.

<i>Time (weeks)</i>	<i>Amount Saved (dollars)</i>
0	
1	
2	
3	
4	
5	
6	

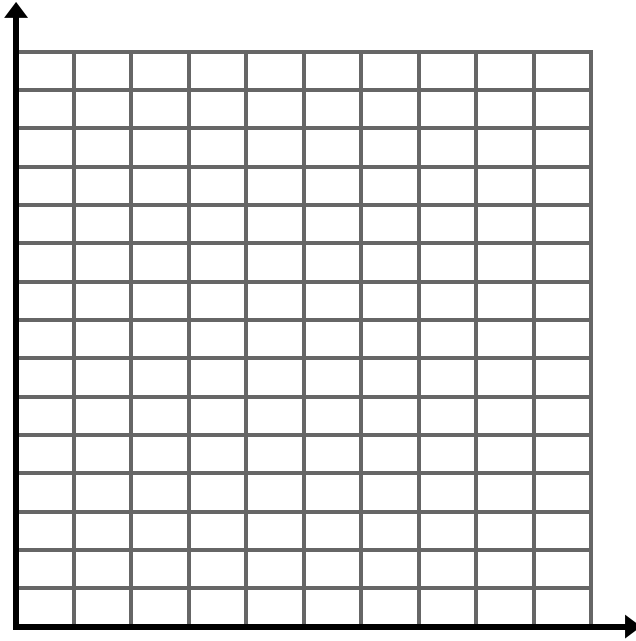


b. Write an equation for the amount of money m Hillary will have saved after w weeks if she continues saving at the same rate.

c. Is this context linear? Use evidence from the context, graph, table, and equation to support your answer.

2. The cost for a crew to come and landscape your yard is \$200 per hour. The crew charges an initial fee of \$100 for equipment.
- a. Complete the table and graph below to show how much it will cost for the crew to work on your yard for 6 hours.

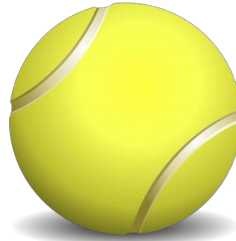
<i>Time (hours)</i>	<i>Cost (dollars)</i>
0	
2	
4	
6	



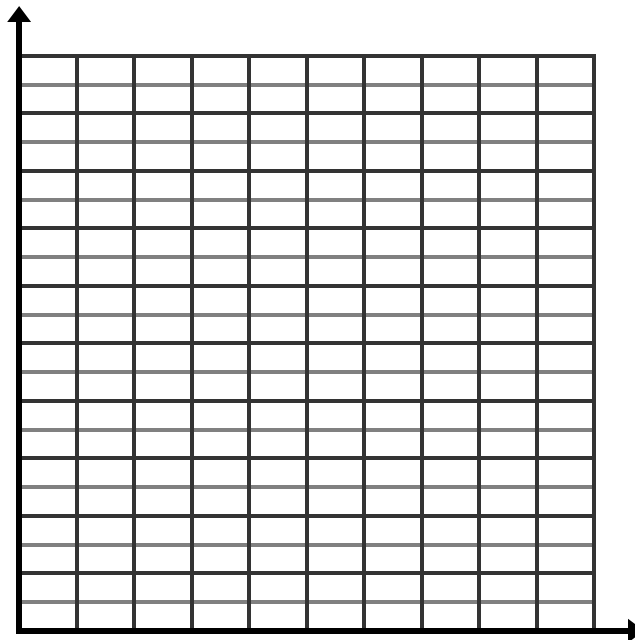
- b. Write an equation for the cost c of landscaping for h hours.
- c. Is this context linear? Use evidence from the context, graph, table, and equation to support your answer.
- d. Compare this landscaping problem to the problem with Hillary's savings. How are the problems similar? How are they different?
- e. How would you change the savings context so that it could be modeled by the same equation as the landscaping context?
- f. How would you change the landscaping context so that it could be modeled by the same equation as the savings context?

3. Linda is always losing her tennis balls. At the beginning of tennis season she has 20 tennis balls. The table below represents how many balls she has as the season progresses; where x represents the number of weeks and y represents the number of tennis balls.

<i>Weeks</i>	<i>Number of tennis balls</i>
0	20
2	16
4	12
6	8



- a. Complete the graph to show how many weeks will pass until Linda runs out of balls.



- b. Use the table and the graph to find the rate of change.
- c. Write an equation that represents this relationship.
- d. Explain how to use the equation to determine how many weeks will pass until Linda runs out of balls.