

Name _____

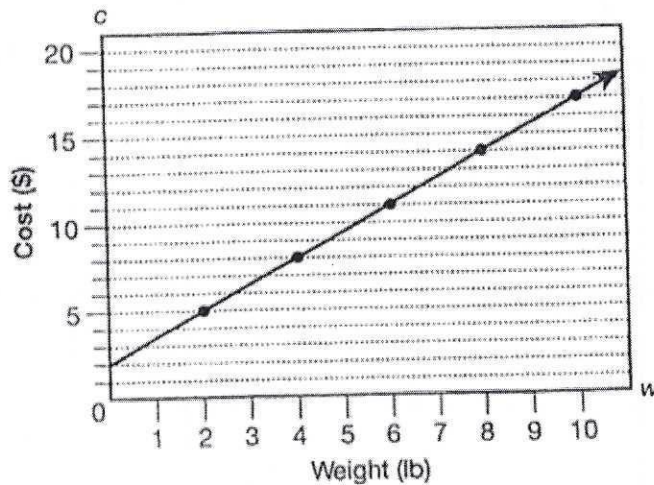
Date _____

Math 8R

Period _____

Real World Functions - Day 1

1. A shipping company uses the following graph to show its customers the cost of sending a package based on the weight of the package being sent.



- a) Determine the rate of change for the function. _____
- b) Explain what the rate of change means in terms of this scenario.

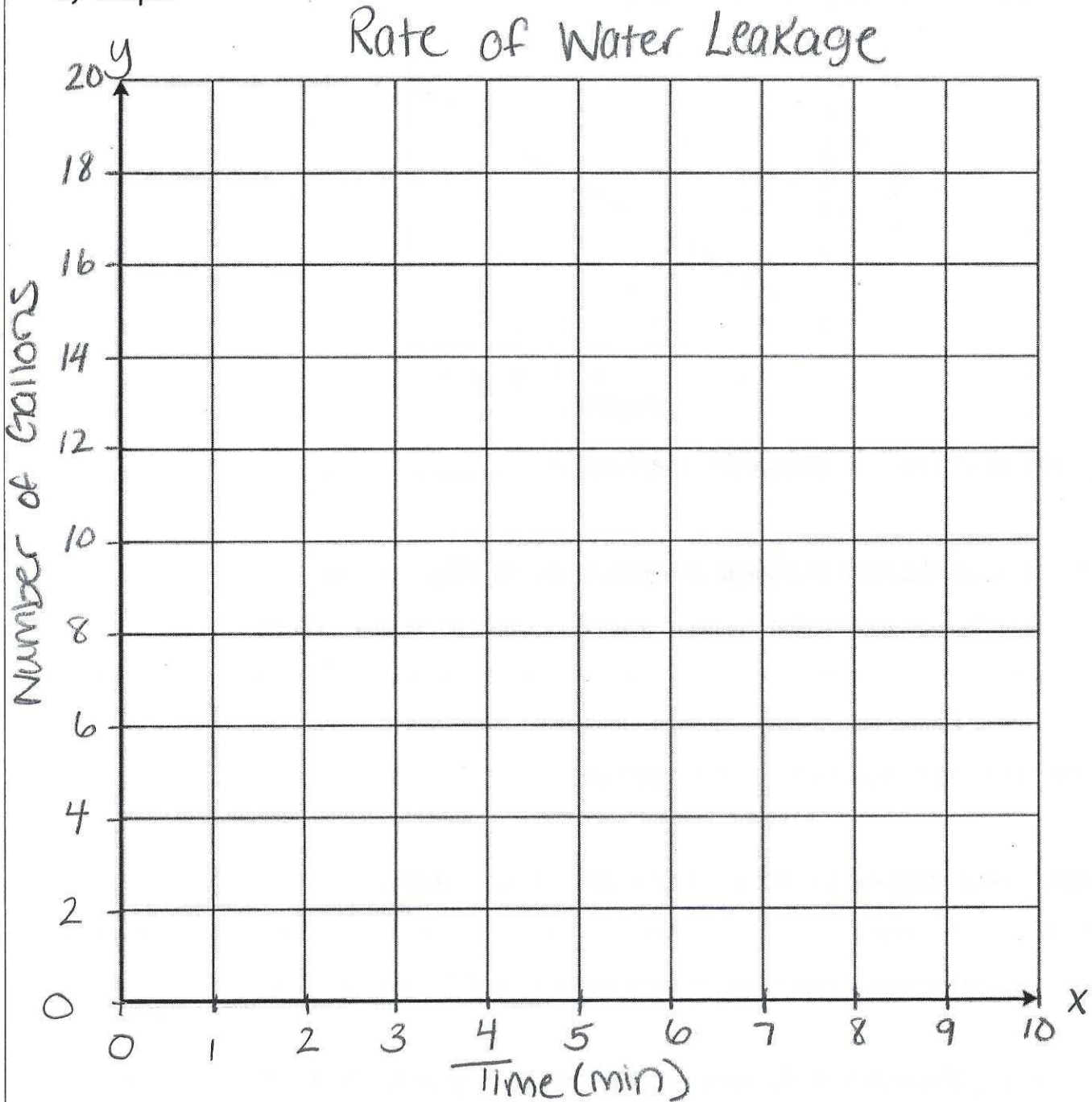
- c) Determine the y-intercept for the function. _____
- d) Explain what the y-intercept means in terms of this scenario.

- e) Explain why the graph of the function does not extend to the left side of the y-axis or below the -axis.

2. A water tank that holds 18 gallons leaks two gallons of water every minute. Determine the rate of change and initial value of the situation and use them to write the equation. Then, graph the relationship.

a) Equation: _____

b) Graph:

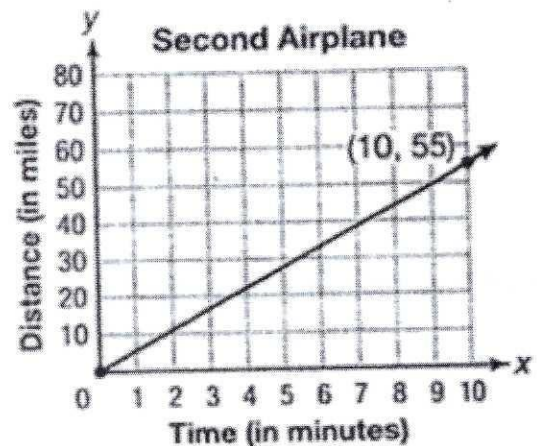


c) How long does it take for the tank to empty? _____

3. Two airplanes leave an airport and travel at steady speeds. The first plane's distance from the airport in miles, d , over time in minutes, t , is given by the equation below:

First airplane: $d = 4.9t$

The second plane's distance from the airport over time is given by the graph on the right.



- a) Find the speed of each airplane with the proper units.

First airplane: _____

Second airplane: _____

- b) Which plane travels at the faster rate, and by how much? _____

4. Compare the two linear functions listed below.

Function 1: Pocket Money - Mike has \$25. His mother gives him \$5 per week. Let y be the amount of money he earns as a function of the number of weeks, x . Write an equation to represent the function.

x	y
0	25
1	30
2	35
3	40

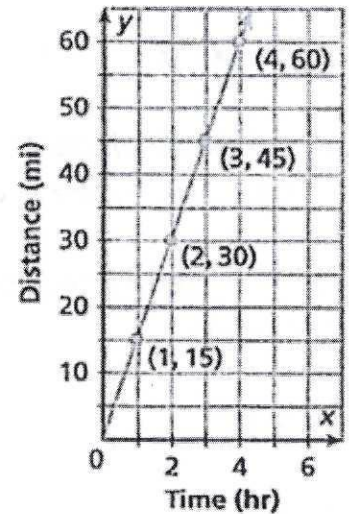
Function 2: Burger - Ronny has \$20 at the start of the day. He spends \$2 on a burger. Write the rule for the total cost, c , to purchase a burger as a function of the number of days, d .

- a) Which function has a greater rate of change? _____

5. The graph shows the distance Nathan bicycled over time.

a) Find the rate of change from 1 hour to 2 hours. _____

b) Find the rate of change from 1 hour to 4 hours. _____



c) Recall that the graph of a proportional relationship is a straight line and passes through the origin. Explain whether the relationship between Nathan's time and distance appears to be a proportional relationship. _____

d) Find Nathan's unit rate. _____

e) Compare the rate of change to the unit rate. _____

f) Does it matter what interval you use when you find the rate of change of a proportional relationship? Explain. _____

g) Do you think that the value of r in the point $(1, r)$ is always the unit rate for any situation? Explain. _____