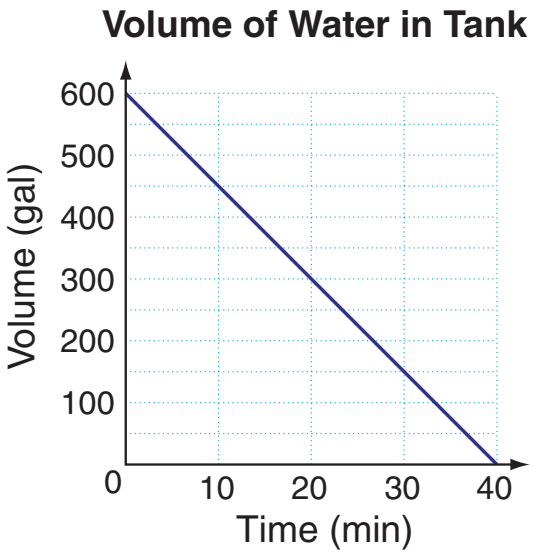
EXPLORATION

9-1 Multiple Representations of Functions

Many real-world situations can be represented with a verbal description, a graph, a table, and an equation.

1. Complete the table for the graph shown here.

Time (min)	Volume (gal)
0	
10	
20	
30	
40	



2. Write a verbal description of the situation shown on the graph.

3. How many gallons are drained from the tank every 10 minutes? How many gallons are drained every minute?

4. Write an equation for the situation, where x is the time in minutes and y is the volume of water in the tank in gallons.

THINK AND DISCUSS

5. **Discuss** the advantages and disadvantages of using a graph to represent the situation.

6. **Discuss** the advantages and disadvantages of using an equation to represent the situation.

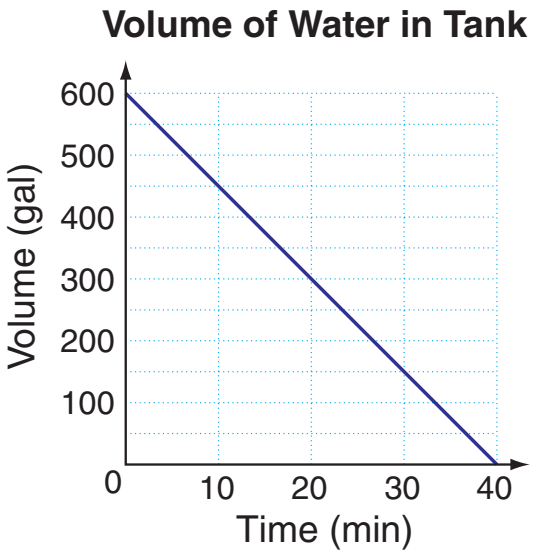
EXPLORATION

9-1 Multiple Representations of Functions

Many real-world situations can be represented with a verbal description, a graph, a table, and an equation.

1. Complete the table for the graph shown here.

Time (min)	Volume (gal)
0	600
10	450
20	300
30	150
40	0



2. Write a verbal description of the situation shown on the graph.

3. How many gallons are drained from the tank every 10 minutes? How many gallons are drained every minute? 150 gal; 15 gal

4. Write an equation for the situation, where x is the time in minutes and y is the volume of water in the tank in gallons.

THINK AND DISCUSS

5. **Discuss** the advantages and disadvantages of using a graph to represent the situation.

6. **Discuss** the advantages and disadvantages of using an equation to represent the situation.

2. A water tank starts with 600 gallons of water in it. It is drained at a constant rate until it is completely empty after 40 minutes.
4. $y = 600 - 15x$
5. The graph makes it easy to see at a glance that the tank is losing water at a constant rate. However, it may be difficult to find the exact volume of water in the tank at a specific time.
6. The equation makes it easy to calculate the exact volume of water in the tank at any given time. However, it may be difficult to understand the situation just by looking at the equation.