Write

Which representation of equal expressions—tables, graphs, equations, or verbal descriptions—do you prefer? Explain why you prefer this representation and provide an example.

Remember

Multiple representations such as a table, an equation, and a graph can be used to represent a problem situation.

Practice

The Department of Transportation in each state is responsible for the improvements and repairs of that state's roads. One important job is to repaint the road lines that have worn away or faded. A painting crew is painting a 24-mile stretch of road. They have already completed a total of 9.5 miles of the road. The crew has been painting at a rate of 0.25 mile per hour and continues to paint at the same rate.

1. Identify the two quantities that are changing in this situation, identify the independent and dependent quantities, and define the variables for these quantities. Then write an equation that relates the two quantities.
2. What is the unit rate of change in this situation? Explain.
3. How many total miles of the road will be completed if the crew works for another 2 hours?
4. How many more hours does the crew need to work to complete half of the job?
5. Complete the table and then construct a graph.

	Independent Quantity	Dependent Quantity
Quantities		
Units of Measure		
Variables		
	0	
	2	
	5	
	6.5	
		12
		24
		8
		0

Stretch

How could you graph the solutions of an inequality on a coordinate plane? Create a situation that can be modeled with an equation on the coordinate plane. Then show how to model inequalities and their solutions on the coordinate plane.

Review

1. Fernando is using a garden hose to fill his backyard pool at a rate of 10 gallons per minute. The pool already contains 9000 gallons of water. The capacity of the pool is 12,000 gallons.
   a. Define the independent and dependent variables.
   b. Define the unit rate of change.

2. Use double number lines to solve each equation.
   a. $2(x + 1) = 10$
   b. $-(x - 5) = 0$

3. Solve for each unknown.
   a. $\frac{1.6}{2.8} = \frac{x}{7}$
   b. $\frac{2}{d} = \frac{0.4}{5}$