

Name: _____ Period: _____ Date: _____

Interpreting Linear Equations Word Problems

1.

Autumn had a math homework assignment each day last week. Each assignment had a different number of problems and took her a different amount of time to complete, as shown by the table below.

Number of Problems	Time to Complete (min)
5	20
10	40
15	60
20	80
25	100

If Autumn spent the same amount of time on each problem, how long did it take her to complete one math problem?

2.

Which statement describes the rate of change of the following function?

$$f(x) = 7x - 2$$

- A. The function has a varying rate of change when $x < 2$.
- B. The function has a varying rate of change when $x > 7$.
- C. The function has a constant rate of change, decreasing for all x at a rate of 2.
- D. The function has a constant rate of change, increasing for all x at a rate of 7.

3.

The number of entertainment websites in 1999 was 78. By 2003, there were 1,090 entertainment websites.

Approximately what was the rate of change for the number of websites for this period of time?

4.

Michael got a job peeling potatoes. In the first two hours of his shift, he peeled 40 potatoes. How many potatoes can he peel in seven hours?

5.

Which statement describes the rate of change of the following function?

$$f(x) = -6x - 9$$

- A. The function has a varying rate of change when $x < 9$.
- B. The function has a varying rate of change when $x < 6$.
- C. The function has a constant rate of change, decreasing for all x at a rate of 9.
- D. The function has a constant rate of change, decreasing for all x at a rate of 6.

6.

Kaylee is unpacking boxes of magazines at a bookstore. To track her progress, she records the number of boxes she has left to unpack (y) and the number of hours she has spent unpacking (x).

Hours Unpacking (x)	Boxes Left (y)
1	60
2	55
3	50
4	45

If Kaylee started with 65 boxes and continues to unpack the boxes at the same rate, how many more hours will it take her to reach her goal of 25 boxes left to unpack?

7.

Macy babysits the children in her neighborhood. For each family, she charges a flat fee plus a per hour charge as described by the data in the table.

Babysitting Pricing				
Number of Hours	6	8	12	18
Total Charged	61	79	115	169

Which equation represents the total amount Macy charges for each family where x represents the number of hours she babysits?

8.

Abigail is studying for the school spelling bee. She already knows 188 words from the vocabulary list. Each day, she learns 44 additional words from the vocabulary list.

Which equation can be used to determine the total number of words Abigail knows from the vocabulary list, y , over x days?

9.

The table below shows the relationship between the number of teaspoons of baking powder in a mix and the height of fudge brownies in centimeters. Which equation represents the height of fudge brownies with x teaspoons of baking powder?

Making Fudge Brownies				
Baking Powder (tsp)	4	5	6	7
Height of Brownies (cm)	1.95	2.25	2.55	2.85

10.

A company gives yearly raises to their employees. The salaries at the company are based on the equation below, where S is the salary before taxes and t is the time since the date of hire in years.

$$S = \$33,113 + \$600t$$

What is the minimum number of years an employee would have to stay to make a salary of over \$45,000 per year?

11.

The charge to ship a package from one town to another, C , is given below as a function of the weight of the object, w , in pounds.

$$C = \$3.50 + \$0.55w$$

If the shipping cost for Cathy's item was \$7.08, what was its weight?

12.

Jamie is trying to lose weight. She starts a diet and workout regimen and records her weight (y) every week (x) at her gym. Her initial weight was 184 lbs.

Week (x)	Weight (y)
1	181
2	178
3	175
4	172

If Jamie continues to lose weight at the same rate, how many more weeks will it take her to reach her goal of 160 lbs?