

LESSON**3-2****Rate of Change**

Tell whether the rates of change are constant or variable. If it constant, what is the rate of change?

1. calories per serving _____

2. distance jumped _____

Servings	1	2	5	7
Calories	150	300	750	1,050

Jumps	2	4	7	10
Distance (ft)	12	24	35	55

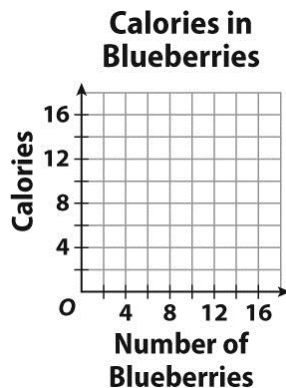
Solve.

3. In 3 hours, 654 gallons of water passed through a pipe. What was the average rate in gallons per hour at which the water passed through the pipe? _____

4. A car traveled 200 miles in 4 hours. What was the car's average rate of speed in miles per hour?

Use the information in the table for 5–9.**Calories in Blueberries**

Number of Blueberries	5	10	15
Number of Calories	4	8	12

5. List the ordered pairs.

6. Plot the ordered pairs on the grid at right, and draw a line connecting them.

7. Find the rate of change line you graphed. _____

8. When finding the rate of change, does it matter which two points you use? Explain why or why not.

9. Create an equation from the information. _____

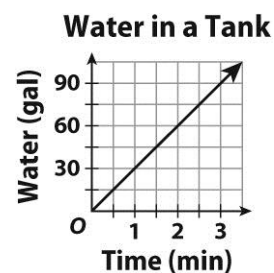
Solve.

10. Jasmine bought 7 yards of fabric. The total cost was \$45.43. What was the average cost per yard of the fabric she bought?

11. A train traveled 325 miles in 5 hours. What was the train's average rate of speed in miles per hour?

Name _____ Date _____ Class _____

12. The graph at the right shows the amount of water in a tank that is being filled. What is the average rate of change in gallons per minute?



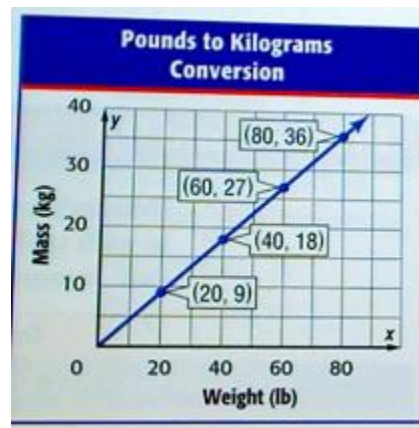
Use the graph to the right to answer questions 12-15

13. What is the input of the graph? _____

14. What is the output of the graph? _____

15. What is the rate of change of the graph?

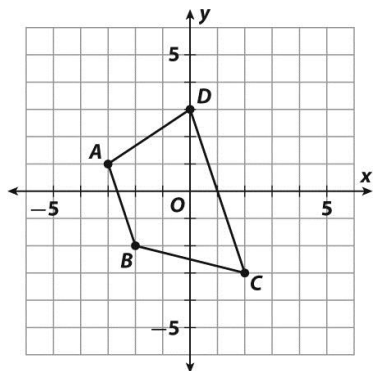
16. What equation is represented by the graph? _____



5. 30 gal/min
6. No; the size of the tank does not matter. The rate of water flow will stay the same.
7. $n \approx 24$

Practice and Problem Solving: C

1.



2. $\frac{2}{3}$
3. $-\frac{1}{4}$
4. $\frac{2}{3}$
5. $\frac{2}{3}$
6. One pair of opposite sides (\overline{AB} and \overline{CD}) has the same slope so those sides are parallel. The other pair has different slopes so those sides are not parallel.
7. trapezoid
8. slope $\frac{1}{46}$
9. 1,840 peanuts
10. A right triangle; The side with a slope of 0 is horizontal and the side with an undefined slope is vertical. Those two sides are perpendicular to each other, so the triangle is a right triangle.

Practice and Problem Solving: D

1. constant
2. variable
3. $\frac{2}{3}$
4. 1
5. $\frac{1}{2}$

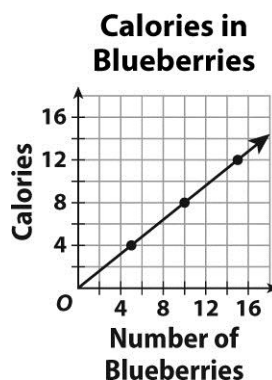
6. $-\frac{2}{5}$
7. 218 gal/h
8. 50 mi/h

Reteach

1. increase
2. down
3. When the slope is positive, as the value of y increases, the value of x increases.
4. When the slope is positive, as you move from left to right, the line goes up.
5. slope $\frac{2}{3}$

Reading Strategies

1. (5, 4), (10, 8), (15, 12)
- 2.



3. $\frac{4}{5}$
4. No; Since the points lie in a line, the slope between any two points is the same.

Success for English Learners

1. If both the rise and the run are positive, the slope of the line is positive. The line slants upward from left to right.
2. If either the rise or the run is negative, the slope of the line is negative. The line slants downward from left to right.
3. When the points form a line, the ratio of rise to run for any two points will be the same.

LESSON 3-3

Practice and Problem Solving: A/B

1. $\frac{4}{5}$; $\frac{4}{5}$ mi/h
2. $\frac{6}{5}$; $\frac{6}{5}$ mi/h