Practice 2.10.2: Finding Average Rate of Change   A

For problems 1–5, calculate the rate of change for each scenario described.

1. The Beechcraft 1900D is a commuter airplane with a fuel capacity of 665 gallons. The function that represents how the amount of fuel changes as a function of distance flown is $f(x) = -0.9x + 665$, where x represents miles flown, and $f(x)$ represents the amount of fuel remaining. What is the rate of change for this scenario?

2. The velocity of a ball thrown directly upward can be modeled by the function $f(x) = -32x + 96$, where x represents time in seconds, and $f(x)$ represents the height of the ball above the ground in feet. What is the rate of change for this scenario?

3. The following table lists common Celsius to Fahrenheit degree conversions. What is the rate of change for this function?

°C (x)	°F $(f(x))$
0	32
10	50
20	68
30	86
40	104

The following table represents the total cost of a cell phone plan. Use the table to answer questions 4 and 5.

Number of minutes (x)	Total cost in dollars $(f(x))$
0	35
250	55
500	75
750	95
1000	115

4. What is the rate of change for this function over the interval [250, 1000]?

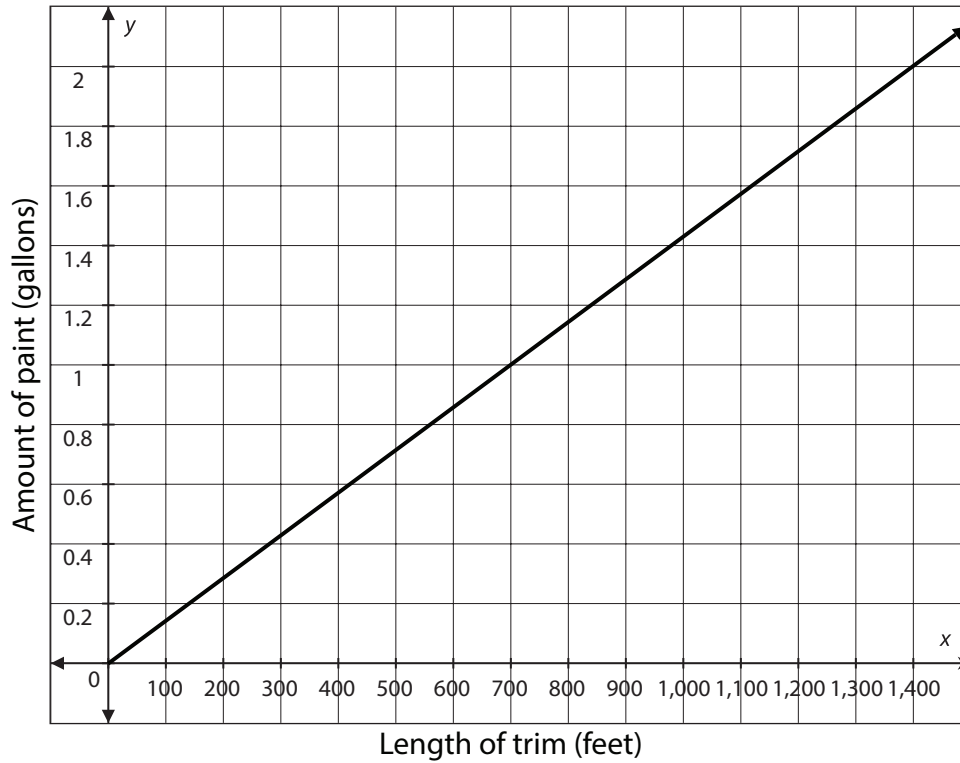5. What is the rate of change for this function over the interval [250, 750]?

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The following graph shows the amount of paint needed to paint the trim molding of a house as a function of the length of trim to be painted. Use the graph to answer questions 6 and 7.

6. What is the approximate rate of change for the interval [150, 500]?

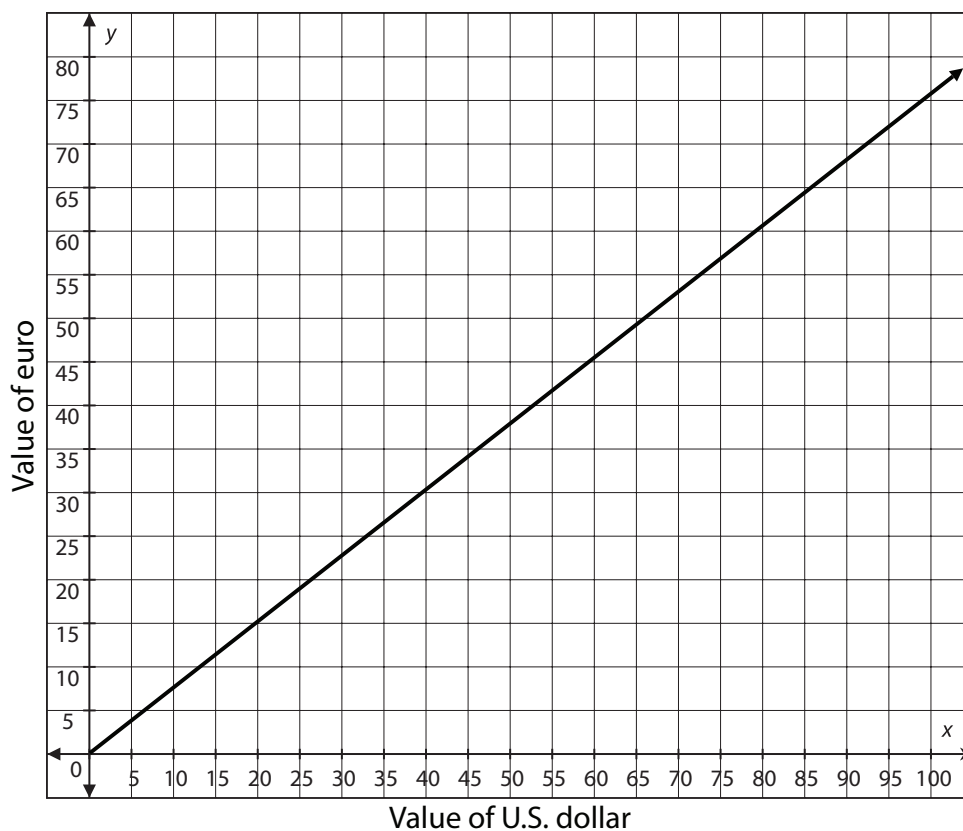7. What is the approximate rate of change for the interval [900, 1300]?

continued

UNIT 2 • REASONING WITH LINEAR EQUATIONS AND INEQUALITIES
Lesson 10: Interpreting Linear Functions

The following graph shows the value of the U.S. dollar compared to the value of the euro on a specific day. Use the graph to answer questions 8–10.

8. What is the approximate rate of change in the number of euros per dollar for the interval [10, 20]?

9. What is the approximate rate of change in the number of euros per dollar for the interval [40, 55]?

10. Could you predict the rate of change for a third interval on the same graph? If so, what is your prediction?