Name _____ Date _____ Class _____

LESSON 4-3

Proportional Relationships and Graphs

Practice and Problem Solving: A/B

Complete each table. Explain why the relationship is a proportional relationship.

1. A cashier earns $8 per hour.

Time (h)	2	4		
Pay ($)	16		40	72

_____

_____

2. Tomatoes cost $0.70 per pound.

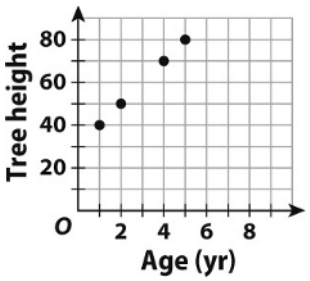
Weight (lb)	2		6	8
Price ($)	1.40	2.10		

_____

_____

Tell whether the relationship is a proportional relationship. Explain your answer.

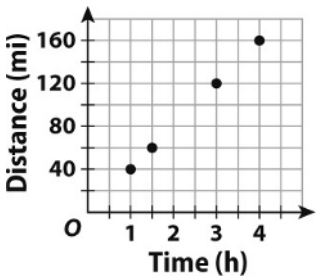
3.



_____

_____

4.



_____

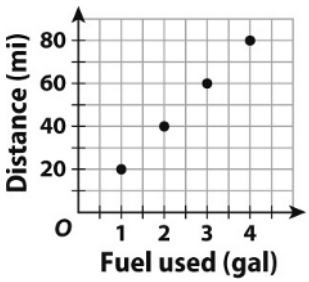
_____

The graph shows the relationship between the distance traveled by a car and the amount of fuel used by the car.

5. Explain the meaning of (2, 40).

_____

_____



6. Write an equation for this relationship.

_____

_____

7. Suppose a compact car uses 1 gallon of fuel for every 27 miles traveled. How would the graph for the compact car compare to the graph for the car shown?

_____

5. $y = 35x$

6. $y = 7x$

Reading Strategies

1. $\frac{3}{1} = 3$; $\frac{6}{2} = 3$; $\frac{9}{3} = 3$; $\frac{12}{4} = 3$

2. 3

3. yes

4. $\frac{35}{1}$

5. $\frac{4.35}{1}$

Success for English Learners

1.

○	6	3	9	12	15
⬭	2	1	3	4	5

2. 3

LESSON 4-3

Practice and Problem Solving: A/B

1.

Time (h)	2	4	**5**	9
Pay ($)	16	**32**	40	72

Earnings are always 8 times the number of hours.

2.

Weight (lb)	2	**3**	6	8
Price ($)	1.40	2.10	**4.20**	**5.60**

Cost is always 0.7 times the number of pounds.

3. Not proportional; The line will not pass through the origin.

4. Proportional; The line will pass through the origin.

5. The car uses 2 gal of fuel to travel 40 mi.

6. $y = 20x$, where x is the gallons of fuel used, y is the distance traveled (in miles), and k is the constant of proportionality

7. The graph for the compact car would be steeper.

Practice and Problem Solving: C

1. Employee B; Answers may vary. Sample answer: Employee A earns $7.50 per hour, and employee B earns $10 per hour, so employee B earns more money.

2. Employee A: $15 \times \$7.50 = \$112.50$; employee B: $15 \times \$10.00 = \$150.00$

3. Sample answer: $y = 8x$

4. Company A: proportional because a graph comparing months of service and total cost will form a line passing through the origin; Company B: not proportional because the line formed will not pass through the origin

5. Yes; $y = 2x$

6. Sample answer: Graph the points and analyze the graph. The graph of a proportional relationship is a line that passes through the origin.

Practice and Problem Solving: D

1. proportional; The cost is always 10 times the number of shirts.

2. proportional; The number of crayons is always 50 times the number of boxes.

3. proportional; The line will pass through the origin.

4. not proportional; The line will not pass through the origin.

5. $y = 6x$

6. $y = 4x$

7. $y = \frac{1}{3}x$

8. Use the point (1, 8) to find the constant of proportionality, 8 or $\frac{8}{1}$

Reteach

1. hours worked; pay (in dollars); Sample answer: (2, 14), $\frac{14}{2} = 7$; $y = 7x$

2. number of students; cost of admission (in dollars); Sample answer: (12, 24), $\frac{24}{12} = 2$; $y = 2x$