Tuesday - 7 October 2014

Lesson 2.3 Proportional Relationships and Graphs

Day 1
Teach objective
Assignment - Guided practice and Independent practice completed as a class

Day 2
Review
Cooperative (elbow buddy)assignment 2-3 practice and problem solving: D
2-3 Practice and problem solving: A/B

Login to Go Math
Go to the Resources Tab
Click on the Student Online Edition (yellow open book)
This will take you to another window to an interactive student edition textbook.

Go to page 73

Answers to "reflect", Explore activity" and "your turn" questions

EA. A. 10, 15, 7, 50; B. Yes, the number of gallons per minute is always 5.; C. 10, 15, 7, 50; E. 0; (0,0) the origin; F. No, it would not be on this graph because 125/23 is approx. 5.4 not 5.

1. No the line does not go through the point of origin.
2. Distance 0 at time 0
3. Esther's would be steeper
4. a. 60 miles in 4 hours
   b. 15
   c. y=15x

For answers to the guided practice and independent practice, see Coach Gammon.

Additional web sites
Below is a Khan academy web site. When you click on the website, there will be a couple of short videos on the left hand side that you can watch.

1. https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-ratio-proportion/cc-7th-proportional-rel/v/analyzing-and-identifying-proportional-relationships-ex1

Remember, on the online edition, you can click on the "math on the spot" for a little extra teaching from Prof Burger. If you only have your book, use a QR scanner on the "math on the spot"

Lesson 2-3

Using Graphs to Represent & Analyze Proportional Relationships

In order to decide whether a relationship is proportional using a graph:

1. The points must form a _____

2. The line goes through the _____

A house cleaning company charges $45 per hour. Is the relationship a proportional relationship? Explain.

STEP 1 Make a table.

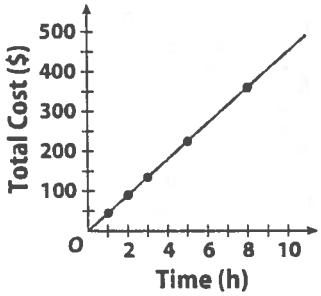
Each hour costs $45. So for 2 hours, the cost is $2 \cdot \$45 = \$90$.

Time (h)	1	2	3	5	8
Total cost ($)	45	90	135	225	360

STEP 2 Write the data in the table as ordered pairs (time, cost).

(1, 45), (2, 90), (3, 135), (5, 225), (8, 360)

STEP 3 Graph the ordered pairs.



Place time on the x-axis and total cost on the y-axis.

Plot each point.

Connect the points with a line.

The graph is a line that goes through the origin.

So, the relationship is proportional.

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LESSON 2-3

Proportional Relationships and Graphs

Practice and Problem Solving: D

Tell whether the relationship is a proportional relationship. Explain your answer. The first one is done for you.

1. Each shirt costs $10.

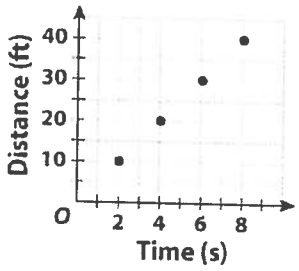
Shirts	1	2	3	4
Cost ($)	10	20	30	40

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

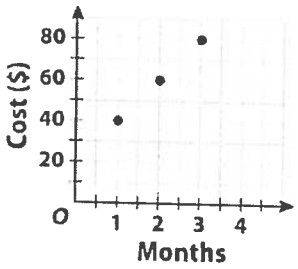
2. There are 50 crayons in each box.

Boxes of crayons	1	2	3
Crayons	50	100	150

3. A person walks 5 feet per second.



4. A gym costs $20 per month plus a fee.



Write an equation for the proportional relationship with the given constant of proportionality *k*. The first one is done for you.

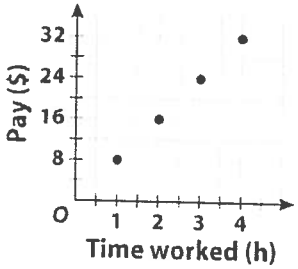
5. $k = 6$

$y = 6x$

6. $k = 4$

7. $k = \frac{1}{3}$

8. The graph shows the relationship between the money earned and the number of hours worked. Determine the constant of proportionality for this relationship. Show your work.



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LESSON 2-3

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 $.70 per pound.

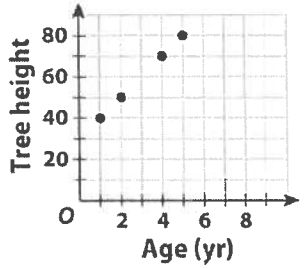
Weight (lb)	2		6	8
Price ($)	1.40	2.10		

_____

_____

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

3.



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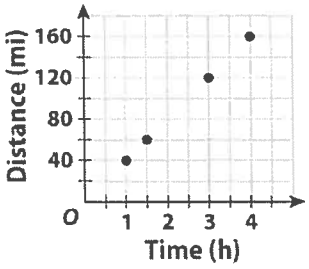
4.



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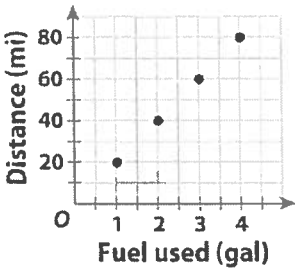
The graph shows the relationship between the distance traveled by a car and the amount of fuel used by the car.

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?

_____