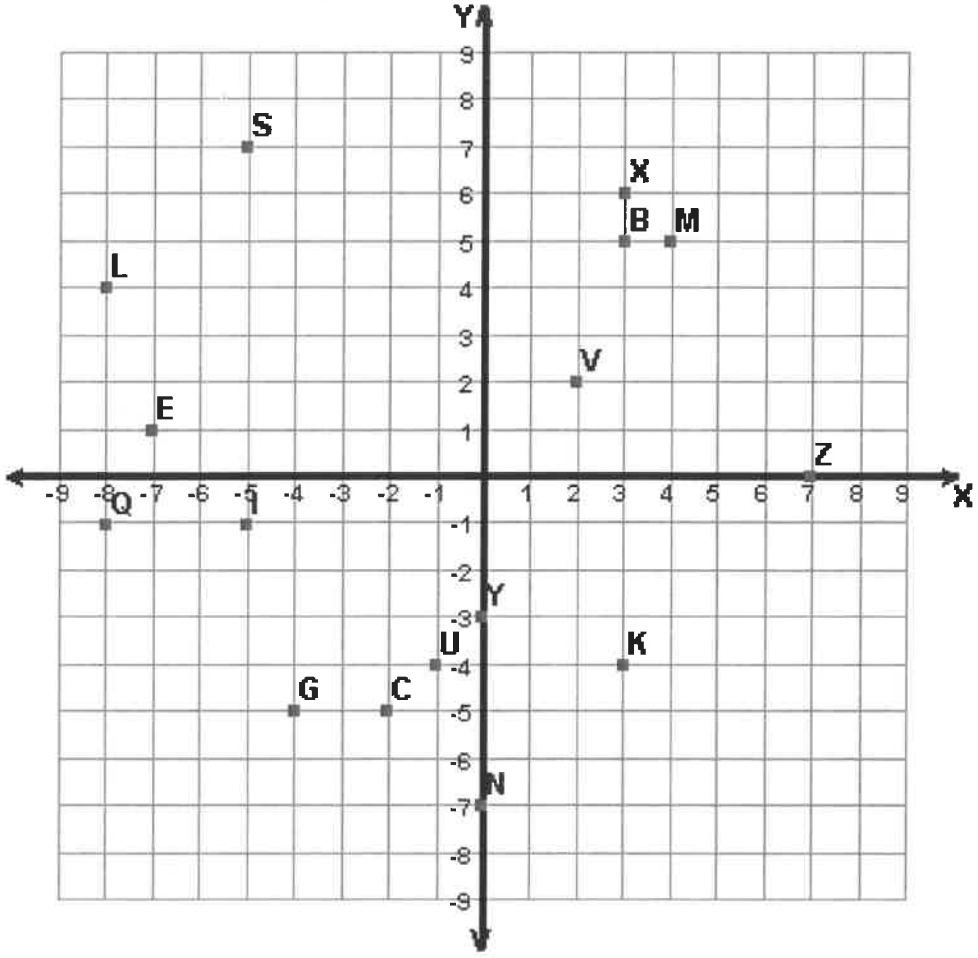
Name : _____ Score : _____

Teacher : _____ Date : _____

Four Quadrant Ordered Pairs



Tell what point is located at each ordered pair.

1) (-8,+4) _____ 3) (+7,+0) _____ 5) (+0,-7) _____ 7) (+3,-4) _____

2) (-8,-1) _____ 4) (+2,+2) _____ 6) (-5,-1) _____ 8) (-4,-5) _____

Write the ordered pair for each given point.

9) **Y** _____ 11) **X** _____ 13) **B** _____ 15) **C** _____

10) **S** _____ 12) **M** _____ 14) **U** _____ 16) **E** _____

Plot the following points on the coorinate grid.

17) **A** (+6,-7) 19) **J** (+9,+3) 21) **P** (-1,+9) 23) **W** (+8,-8)

18) **F** (+1,+5) 20) **R** (-1,-5) 22) **O** (+0,+6) 24) **D** (+6,-4)

Math 6 - HOMEWORK (7.2) Name _____

1. Solve the equations. Check your solutions.

Solve	Check here:	Solve	Check here:
$15 = w + 4$		$a - 2 = 10$	
$3b = 21$		$\frac{1}{3}n = 13$	
$y - 7 = 12$		$34 = \frac{y}{2}$	
$\frac{a}{7} = 5$		$\frac{3}{7}n = 24$	
$4x = 24$		$w + 2 = 12$	

Vocabulary Check:

1. Operations that "undo" each other are called _____
2. A mathematical sentence that contains an equal sign is an _____
3. The value of the variable that makes the equation true is called the _____
4. A _____ is a symbol, usually a letter, used to represent an unknown number.

Lesson Summary

Unit rate is often a useful means for comparing ratios and their associated rates when measured in different units. The unit rate allows us to compare varying sizes of quantities by examining the number of units of one quantity per one unit of the second quantity. This value of the ratio is the unit rate.

Problem Set

1. Find each rate and unit rate.
   a. 420 miles in 7 hours
   b. 360 customers in 30 days
   c. 40 meters in 16 seconds
   d. $7.96 for 5 pounds

2. Write three ratios that are equivalent to the one given: The ratio of right-handed students to left-handed students is 18:4.

3. Mr. Rowley has 16 homework papers and 14 exit tickets to return. Ms. Rivera has 64 homework papers and 60 exit tickets to return. For each teacher, write a ratio to represent the number of homework papers to number of exit tickets they have to return. Are the ratios equivalent? Explain.

4. Jonathan's parents told him that for every 5 hours of homework or reading he completes, he would be able to play 3 hours of video games. His friend Lucas's parents told their son that he could play 30 minutes for every hour of homework or reading time he completes. If both boys spend the same amount of time on homework and reading this week, which boy gets more time playing video games? How do you know?

→

I.P. **Ratio/Proportion Word Problems** Name_____

Set up a proportion to solve each problem, show all work, and label all answers.

1. The ratio of boys to girls is 3 to 2. If there are 12 boys, how many girls are there?

2. It takes one Super Giant Pizza to feed 3 people. If you invite 36 people, how many pizzas will you need?

3. At a recent party, it cost $9.50 for refreshments for 10 guests. At this rate, how much would it cost to have refreshments for 80 guests?

4. Mary has saved $17.50 in the past 3 weeks. At this rate, how much will she save in 15 weeks?

5. Mr. Johnson was paid $190 for a job that required 40 hours of work. At this rate, how much should he be paid for a job requiring 60 hours of work?

6. The park ranger stocks the children's fishing pond keeping a ratio of 4 sunfish to 3 perch. If he puts 300 sunfish into the pond, how many perch should be put into the pond?

7. If two pounds of meat will serve 5 people, how many pounds will be needed to serve 13 people?

8. Jack was planting a tree. He was to dig a hole that was 3 feet deep for every 5 feet of tree height. How deep should he dig the hole for a tree that is 17 feet high?

9. A certain shade of green paint is made from 5 parts yellow mixed with three parts blue. If 2 cans of yellow are used, how many cans of blue should be used?

10. If a 4-pound roast takes 150 minutes to cook, how long should a five-pound roast take?

11. If a jogger runs 2 miles and burns 185 calories, how many calories would he burn jogging 3 miles?

12. The ratio of the cost of a tennis racket to tennis balls is 18:1. If a can of balls cost $5.35, what is the cost of the racket?

13. Curtis School has 1,575 students. The student to teacher ratio is 15 to 1. How many teachers are at Curtis School?

14. A recipe calls for 2 $\frac{1}{2}$ cups of flour to make 2 dozen cookies. How many cups of flour would be required to bake 15 dozen cookies?

15. A meteorologist reports that the ratio of snowfall in January to total snowfall during the average winter is 2 to 5. If 34 inches have fallen in January of the current year, find the predicted total snowfall for the entire winter.

16. Because of slumping sales, a small company had to lay off some of its employees. The ratio of total employees to employees laid off is 5 to 1. Find the total number of employees if 22 are laid off.

17. A crew of loggers cleared $\frac{1}{2}$ acre of lumber in 4 days. How long will it take the same crew to clear 2 $\frac{3}{4}$ acres of lumber?

18. A person who weighs 200 pounds on Earth would weigh about 32 pounds on the moon. Find the weight of a person on Earth who would weigh 15 pounds of the moon.

19. A pump can fill a 750-gallon tank in 35 minutes. How long will it take to fill a 1000-gallon tank with this same pump?

20. In a public opinion poll, 624 people from a sample of 1,100 indicated they would vote for a specific candidate. How many votes can the candidate expect to receive from a population of 40,000?

I.P. Determining Proportionality with Tables

Name:

Determine if the values in the table are proportional (yes) or not (no).

1)

X	Y
-4	-5
-3	-6
-2	-7
-1	-8

2)

X	Y
6	-2
7	-1
8	0
9	1

3)

X	Y
-70	-10
-56	-8
-14	-2
-7	-1

4)

X	Y
6	3
7	4
8	5
9	6

5)

X	Y
1	10
2	20
7	70
10	100

6)

X	Y
2	2
4	4
8	8
10	10

7)

X	Y
20	-32
15	-24
10	-16
5	-8

8)

X	Y
70	-10
63	-9
35	-5
21	-3

9)

X	Y
2	7
6	21
18	63
20	70

10)

X	Y
-12	-32
-9	-24
-6	-16
-3	-8

11)

X	Y
9	3
36	6
64	8
81	9

12)

X	Y
2	4
3	6
4	12
7	21

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

1-10	92	83	75	67	58	50	42	33	25	17
11-12	8	0								

Problem Set Independent Practice

1. A cran-apple juice blend is mixed in a ratio of cranberry to apple of 3 to 5.

   a. Complete the table to show different amounts that are proportional.

Amount of Cranberry			
Amount of Apple			

   b. Why are these quantities proportional?

2. John is filling a bathtub that is 18 inches deep. He notices that it takes two minutes to fill the tub with three inches of water. He estimates it will take 10 more minutes for the water to reach the top of the tub if it continues at the same rate. Is he correct? Explain.

Independent Practice Module 1 Lesson 3

Name:_____

In each table, determine if y is proportional to x. Explain why or why not.

1.

x	y
3	12
5	20
2	8
8	32

2.

x	y
3	15
4	17
5	19
6	21

3.

x	y
6	4
9	6
12	8
3	2

4. Kayla made observations about the selling price of a new brand of coffee that sold in three different-sized bags. She recorded those observations in the following table:

Ounces of Coffee	6	8	16
Price in Dollars	$2.10	$2.80	$5.60

   a. Is the price proportional to the amount of coffee? Why or why not?

   b. Use the relationship to predict the cost of a 20 oz. bag of coffee.

5. You and your friends go to the movies. The cost of admission is $9.50 per person. Create a table showing the relationship between the number of people going to the movies and the total cost of admission.

   Explain why the cost of admission is proportional to the amount of people.

6. For every 5 pages Gil can read, his daughter can read 3 pages. Let g represent the number of pages Gil reads, and let d represent the number of pages his daughter reads. Create a table showing the relationship between the number of pages Gil reads and the number of pages his daughter reads.

   Is the number of pages Gil's daughter reads proportional to the number of pages he reads? Explain why or why not.

7. The table shows the relationship between the number of parents in a household and the number of children in the same household. Is the number of children proportional to the number of parents in the household? Explain why or why not.

Number of Parents	**Number of Children**
0	0
1	3
1	5
2	4
2	1

Module 1 Lesson 4 Independent Practice

Name:_____

1. Joseph earns $15 for every lawn he mows. Is the amount of money he earns proportional to the number of lawns he mows? Make a table to help you identify the type of relationship.

Number of Lawns Mowed				
Earnings ($)				

2. At the end of the summer, Caitlin had saved $120 from her summer job. This was her initial deposit into a new savings account at the bank. As the school year starts, Caitlin is going to deposit another $5 each week from her allowance. Is her account balance proportional to the number of weeks of deposits? Use the table below. Explain your reasoning.

Time (in weeks)				
Account Balance ($)				

3. Lucas and Brianna read three books each last month. The table shows the number of pages in each book and the length of time it took to read the entire book.

Pages Lucas Read	208	156	234
Time (hours)	8	6	9

Pages Brianna Read	168	120	348
Time (hours)	6	4	12

   a. Which of the tables, if any, shows a proportional relationship?

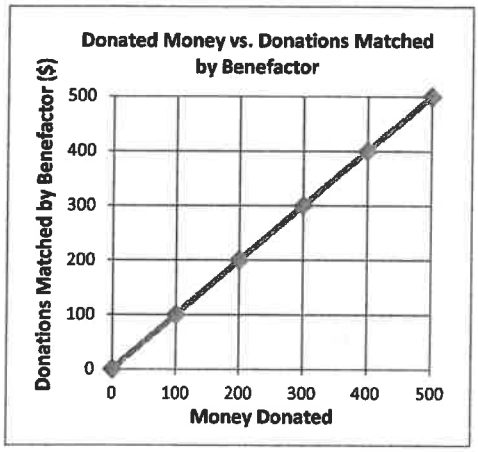
   b. Both Lucas and Brianna had specific reading goals they needed to accomplish. What different strategies did each person employ in reaching those goals?

Module 1 Lesson 5 Independent Practice

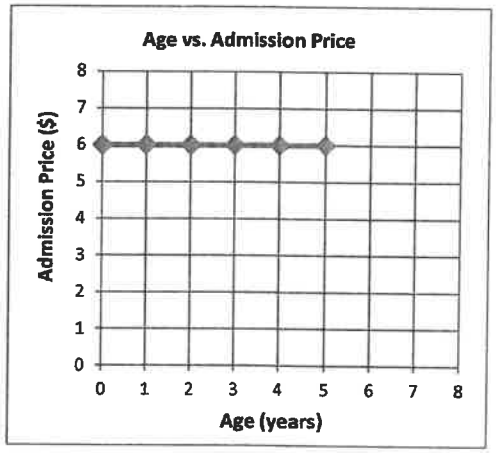
Name:_____

1. Determine whether or not the following graphs represent two quantities that are proportional to each other. Explain your reasoning.

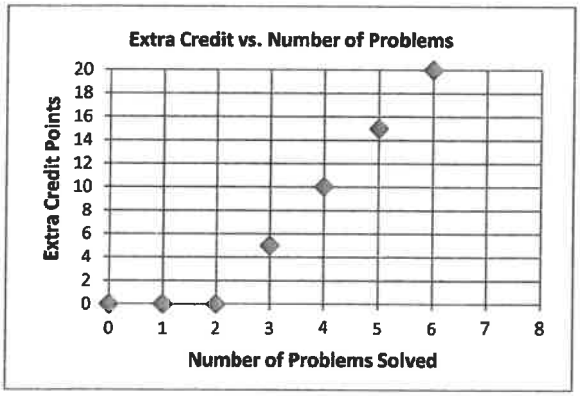
a.



b.

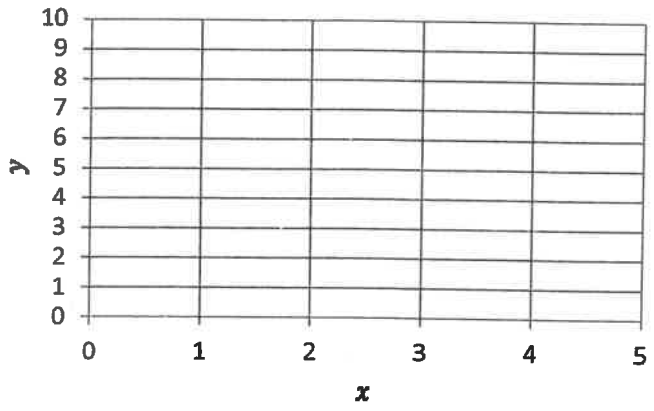


c.



x	y
1	4
2	5
3	6
4	7

b.



Module 1 Lesson 7 Independent Practice

Name:_____

For each of the following problems, define the constant of proportionality to answer the follow-up question.

1. Bananas are \$0.59/pound.
   a. What is the constant of proportionality, or k?

   b. How much will 25 pounds of bananas cost?

2. The dry cleaning fee for 3 pairs of pants is \$18.
   a. What is the constant of proportionality?

   b. How much will the dry cleaner charge for 11 pairs of pants?

3. For every \$5 that Micah saves, his parents give him \$10.
   a. What is the constant of proportionality?

   b. If Micah saves \$150, how much money will his parents give him?

4. Each school year, the seventh graders who study Life Science participate in a special field trip to the city zoo. In 2010, the school paid \$1,260 for 84 students to enter the zoo. In 2011, the school paid \$1,050 for 70 students to enter the zoo. In 2012, the school paid \$1,395 for 93 students to enter the zoo.
   a. Is the price the school pays each year in entrance fees proportional to the number of students entering the zoo?

   b. Explain why or why not.

   c. Identify the constant of proportionality, and explain what it means in the context of this situation.

   d. What would the school pay if 120 students entered the zoo?

   e. How many students would enter the zoo if the school paid \$1,425?

Module 1 Lesson 8 Independent Practice

Name:_____

Write an equation that will model the proportional relationship given in each real-world situation.

1. There are 3 cans that store 9 tennis balls. Consider the number of balls per can.
   a. Find the constant of proportionality for this situation.

   b. Write an equation to represent the relationship.

2. In 25 minutes Li can run 10 laps around the track. Determine the number of laps she can run per minute.
   a. Find the constant of proportionality in this situation.

   b. Write an equation to represent the relationship.

3. Jennifer is shopping with her mother. They pay $2 per pound for tomatoes at the vegetable stand.
   a. Find the constant of proportionality in this situation.

   b. Write an equation to represent the relationship.

4. It costs $15 to send 3 packages through a certain shipping company. Consider the number of packages per dollar.
   a. Find the constant of proportionality for this situation.

   b. Write an equation to represent the relationship.

Module 1 Lesson 9 Independent Practice

Name:_____

1. A person who weighs 100 pounds on Earth weighs 16.6 lb. on the moon.

   a. Which variable is the independent variable? Explain why.

   b. What is an equation that relates weight on Earth to weight on the moon?

   c. How much would a 185-pound astronaut weigh on the moon? Use an equation to explain how you know.

   d. How much would a man who weighs 50 pounds on the moon weigh on Earth?

2. Use this table to answer the following questions.

Number of Gallons of Gas	Number of Miles Driven
0	0
2	62
4	124
10	310

   a. Which variable is the dependent variable, and why?

   b. Is the number of miles driven proportionally related to the number of gallons of gas consumed? If so, what is the equation that relates the number of miles driven to the number of gallons of gas?

   c. In any ratio relating the number of gallons of gas and the number of miles driven, will one of the values always be larger? If so, which one?

   d. If the number of gallons of gas is known, can you find the number of miles driven? Explain how this value would be calculated.

   e. If the number of miles driven is known, can you find the number of gallons of gas consumed? Explain how this value would be calculated.

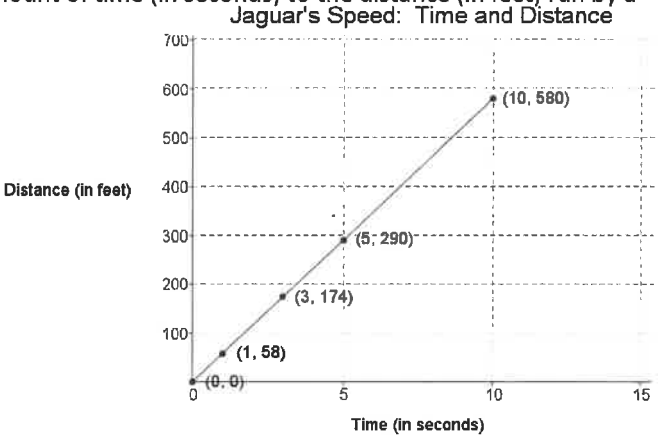
   f. How many miles could be driven with 18 gallons of gas?

   g. How many gallons are used when the car has been driven 18 miles?

Module 1 Lesson 10 Independent Practice

Name:_____

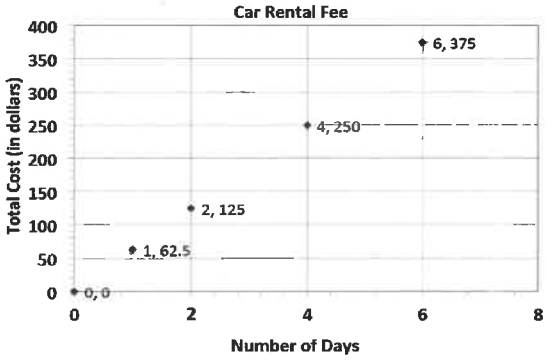
1. The graph to the right shows the relationship of the amount of time (in seconds) to the distance (in feet) run by a jaguar.



   g. What does the point represent in the context of the situation?
   h. What does the point represent in the context of the situation?
   i. Is the distance run by the jaguar proportional to the time? Explain why or why not.
   j. Write an equation to represent the distance run by the jaguar. Explain or model your reasoning.

3. Championship t-shirts sell for each.
   a. What point(s) must be on the graph for the quantities to be proportional to each other?
   b. What does the ordered pair represent in the context of this problem?
   c. How many t-shirts were sold if you spent a total of ?

4. The graph represents the total cost of renting a car. The cost of renting a car is a fixed amount each day, regardless of how many miles the car is driven.



   a. What does the ordered pair represent?
   b. What would be the cost to rent the car for a week? Explain or model your reasoning.

5. Jackie is making a snack mix for a party. She is using cashews and peanuts. The table below shows the relationship of the number of packages of cashews she needs to the number of cans of peanuts she needs to make the mix.

Packages of Cashews	Cans of Peanuts

   a. Write an equation to represent this relationship.
   b. Describe the ordered pair in the context of the problem.

Independent Practice

Each situation below gives two values of a proportional relationship. Represent the relationship in a table, as a graph, and as an equation. Then answer the summary questions.

Name _____

Date _____

1. Mikayla babysat for 4 hours and earned $22.

Starting Info		Table
variables	independent variable	
dependent variable	unit rate	

	0						

Graph	Equation (y = kx)

Summary

What is the constant of proportionality?

2. James spent $15 for 5 gallons of gas

Starting Info		Table
variables	independent variable	
dependent variable	unit rate	

Graph	Equation (y = kx)

Summary

What is the constant of proportionality?

3. Keith bought 3 notebooks for $3.75

Starting Info		Table
variables	independent variable	
dependent variable	unit rate	

Graph	Equation (y = kx)

Summary

What is the constant of proportionality?

---

4. Irene paid a total of $240 for 4 months of a gym membership.

Starting Info		Table
variables	independent variable	
dependent variable	unit rate	

Graph	Equation (y = kx)

Summary

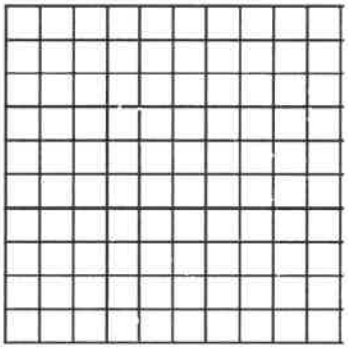
What is the constant of proportionality?

5. Miguel rode his bike 20 miles in 2.5 hours.

Starting Info	
variables	independent variable
dependent variable	unit rate

Table						
	0	0.5	1	1.5	2	2.5

Graph



Equation (y = kx)

Summary

What is the constant of proportionality?

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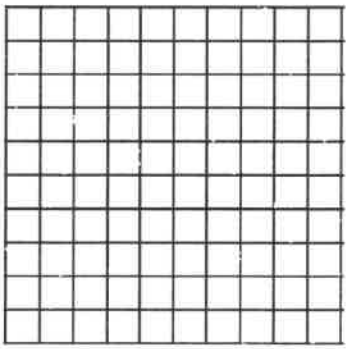
6. The library charged Monica $.50 for a book that was 10 days overdue.

Starting Info	
variables	independent variable
dependent variable	unit rate

Table						
	0	2	4	6	8	10

Graph



Equation (y = kx)

Summary

What is the constant of proportionality?