

Mr. Barnett

Name: _____ Period: _____ Date Due: _____

PROPORTIONAL &
NON- PROPORTIONAL
RELATIONSHIPS

WORKSHEET 2-2
"TO BE OR NOT TO BE PROPORTIONAL"

INTERMEDIATE 1
UNIT 2

Dylan makes \$336 for 32 hours of work, and Angela makes \$420 for 42 hours of work.

- 1] How much do Dylan and Angela each make per hour?

- 2] Is Dylan's wage for 25 hours proportional to Amber's wage for 42 hours? Why or why not?



To determine proportionality between two ratios or rates,

Find the ratio of y to x for Table 1 and Table 2, simplify the fraction to simplest form, and answer the questions that follow.

Table 1:

NUMBER OF HOURS	TOTAL COST (\$)	RATIO: $\frac{y}{x}$
1	\$75	
2	\$120	
3	\$165	
4	\$210	
5	\$255	

Table 2:

NUMBER OF HOURS	TOTAL COST (\$)	RATIO: $\frac{y}{x}$
1	\$45	
2	\$90	
3	\$135	
4	\$180	
5	\$225	

- 3] Which table shows a proportional relationship?

- 4] What makes it a proportional relationship?



To determine proportionality from a table,

Below are the graphs for the tables in the previous section. Use the graphs to determine proportionality.

Table 1:

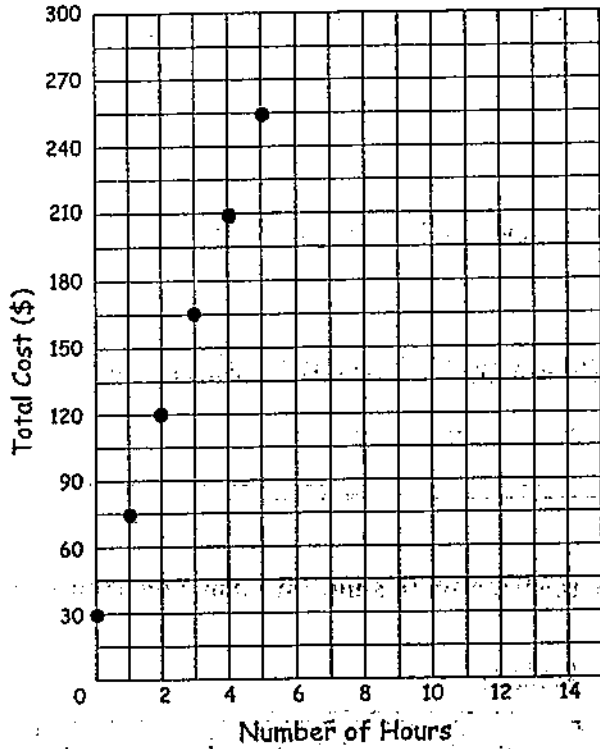
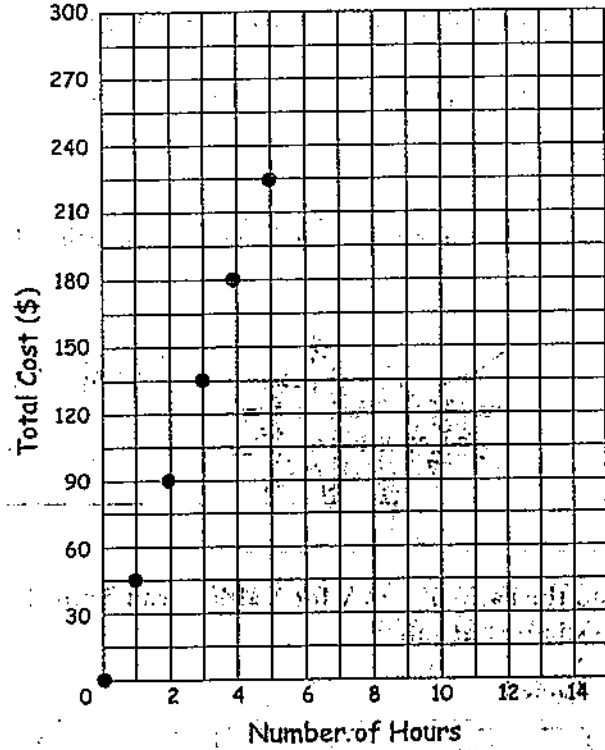


Table 2:



- 5] Which graph shows a proportional relationship?
- 6] What makes it a proportional relationship?



To determine proportionality from a graph,

Determine which of the following tables represent proportional relationships.

1)

x	y
1	-3
2	-6
3	-9
4	-12
5	-15

8)

x	y
-4	-8
-2	-4
0	0
2	4
4	8

9)

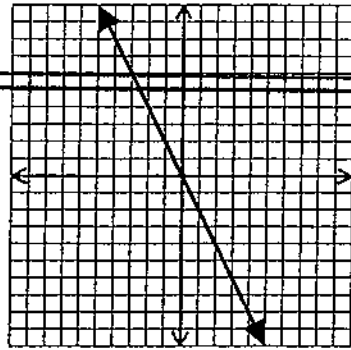
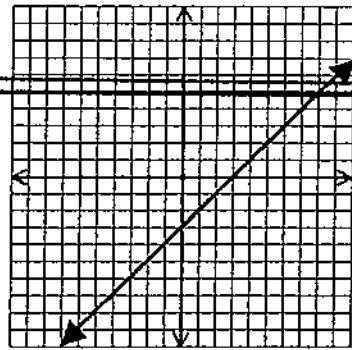
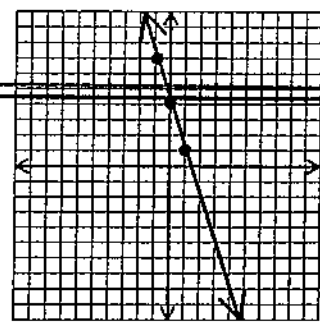
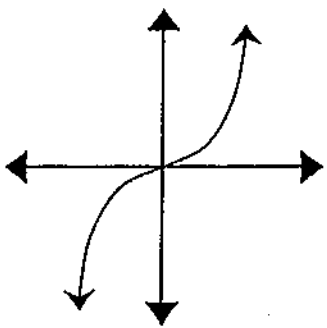
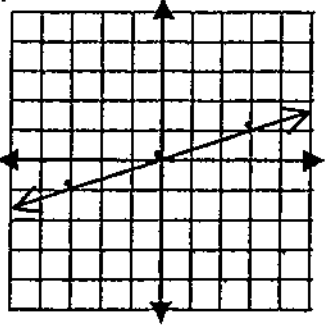
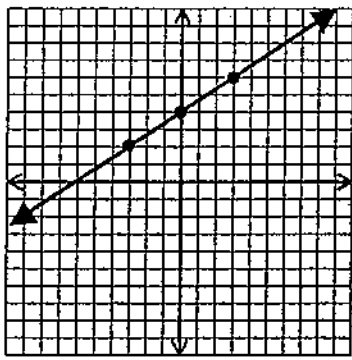
x	y
-1	-6
0	-5
1	-3
2	0
3	4

10)

x	y
-1	-1.5
1	1.5
3	4.5
5	7.5
7	10.5

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Determine which of the following graphs represent proportional relationships. Circle the appropriate response.

<p>11.</p>  <p>Proportional non-proportional</p>	<p>12.</p>  <p>Proportional non-proportional</p>	<p>13.</p>  <p>Proportional non-proportional</p>
<p>14.</p>  <p>Proportional non-proportional</p>	<p>15.</p>  <p>Proportional non-proportional</p>	<p>16.</p>  <p>Proportional non-proportional</p>

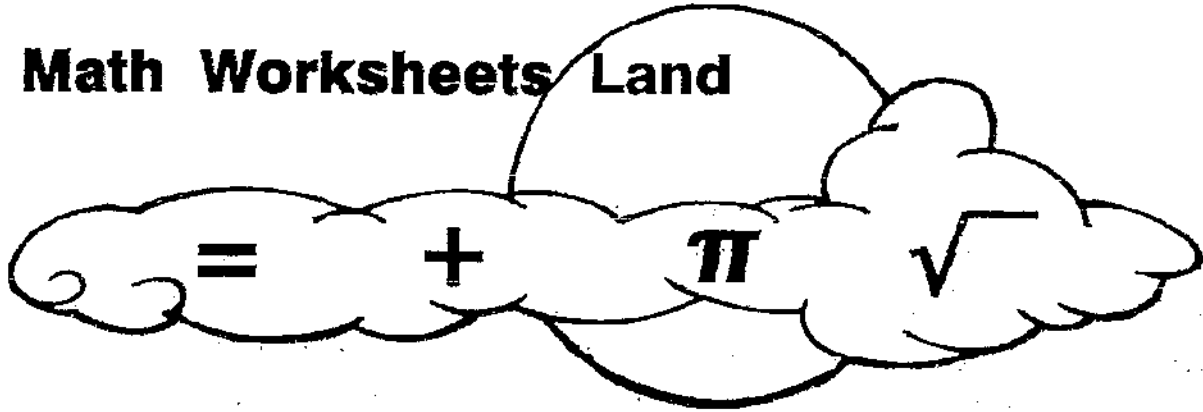
17. Is the following relationship proportional? Explain.

Number of Movie Tickets (x)	Total Cost of Tickets (y)	$\frac{y}{x}$
1	-6	
2	-12	
3	-18	
4	-24	

18. How is a proportional relationship different from a non-proportional relationship?

Grade 7 Ratios & Proportional Relationships Quiz

Math Worksheets Land



This quiz covers the following skills over a series of questions:

- A. Make sense and use unit rate to determine values of measurements.
- B. Determine if two quantities are proportional based on the presence of equivalent ratios.
- C. Find fixed unit rates while analyzing data in a variety of forms.
- D. Use equations and expressions to show proportional relationships.
- E. Display proportional relationships on coordinate graphs.
- F. Use proportional ratios to solve real-world business economic word and story problems.

Scoring Key

# Correct	Score
15	100%
14	93%
13	87%
12	80%
11	73%
10	67%
9	60%
8	53%
7	< 50%

Score: _____

Name _____

Date _____

1. Mike is taking his Social Studies test. Mike was only able to finish $\frac{1}{6}$ of the test in $\frac{1}{2}$ hour. How long will it take him to finish the test?

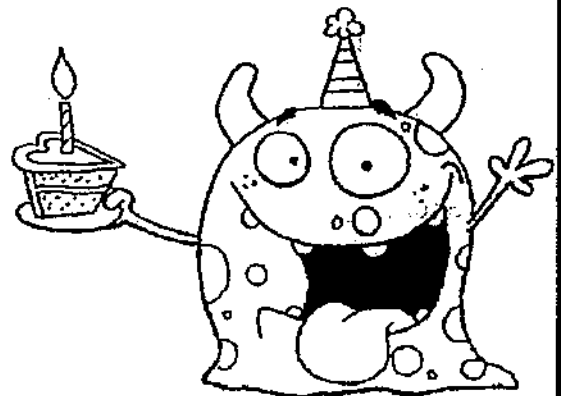


2. Golf is a game where you try to get the fewest number of strokes to get the ball in the hole. Elsie was a really good golfer she played all week to practice for her tournament. Below, you will see the number of holes that she played and how many strokes it took her. Does the data have a proportional relationship? If so, explain the relationship.



Holes	Strokes
18	72
9	36
10	40
12	48
16	64
15	60

3. Marvin can attend 4 birthday parties every day. Represent this relationship by using an equation. Explain the variables.



7. Mary is making Magic Marshmallow Cake. The recipe calls for $\frac{3}{4}$ of a cup of milk and 2 eggs per serving. She wants to make enough cake for 20 people. How much milk will Mary need? _____

8. Cory needed to measure the length of his wall so that he could determine if a painting would fit on it. He measured the wall to be 12 ft. 3 in. The actual measurement was 11 ft. What was the percent error of Cory's measurement? _____

Answer 9 and 10 using the following word story:

The number of miles that Buford can run in an hour can be stated as $d = 6h$, where d is the distance (miles) and h is the number of hours.



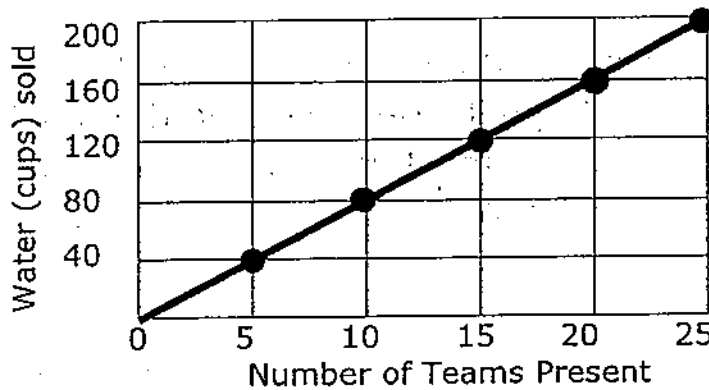
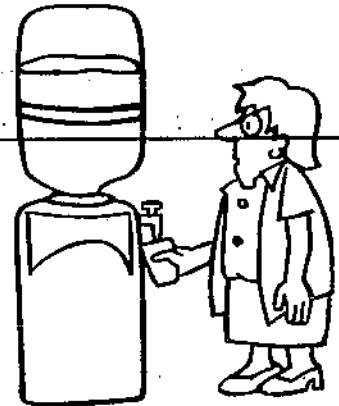
9. What is the constant of proportionality? _____

10. How many miles can Buford run in 8 hours? _____



Answer 4 - 6 using the following word story and graph:

The graph below shows the number of water cups that Mrs. Raymour sold at the park's snack stand and how many different teams were present at the time.



4. What's the constant of proportionality of the graph? _____

5. Write an equation to display the relationship between the number of teams present in the park and the number of water cups sold.

6. There is a huge baseball tournament this weekend at the park. 80 teams are expected to attend. What is the minimum number cups of water should Mrs. Raymour have ready for the tournament?



$$I = P \cdot r \cdot t$$

$I =$ Interest Paid or Earned in \$

$P =$ Principal in \$

$r =$ Interest Rate in %

$t =$ Time in Years

Word Problems: Simple Interest

1. A bank is offering 2.5% simple interest on a savings account. If you deposit \$5000, how much interest will you earn in one year?
2. To buy a car, Jessica borrowed \$15,000 for 3 years at an annual simple interest rate of 9%. How much interest will she pay if she pays the entire loan off at the end of the third year? What is the total amount that she will repay?
- 8 Day 3. Nancy invested \$6000 in a bond at a yearly rate of 3%. She earned \$450 in interest. How long was the money invested?
4. Mr. Johnson borrowed \$8000 for 4 years to make home improvements. If he repaid a total of \$10,320, at what interest rate did he borrow the money?
5. John's parents deposited \$1000 into a savings account as a college fund when he was born. How much will John have in this account after 18 years at a yearly simple interest rate of 3.25%?

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6. To buy a laptop computer, Elaine borrowed \$2,000 for 3 years at an annual simple interest rate of 5%. How much interest will she pay if she pays the entire loan off at the end of the third year? What is the total amount that she will repay?

- 9 Day 7. TJ invested \$4000 in a bond at a yearly rate of 2%. He earned \$200 in interest. How long was the money invested?
8. Mr. Mogi borrowed \$9000 for 10 years to make home improvements. If he repaid a total of \$20,000 at what interest rate did he borrow the money?
9. Bertha deposited \$1000 into a retirement account when she was 18. How much will Bertha have in this account after 50 years at a yearly simple interest rate of 7.5%?
10. Joshua borrowed \$1000 from his friend and paid him back \$1050 in six months. What simple annual interest did Joshua pay his friend?

11. Barbara bought a \$60 purse with a 15% off coupon. How much was the final cost of the purse?



12. It is customary to leave a 20% tip for a good waiter. Your bill was \$52.50 and you experienced good service. How much will you pay the waiter for the tip?

13. The whirlpool is cold at 60° F. The whirlpool warms up 3° F per hour. How long will it take for the temperature to come up to 99° F?

14. Danny was able to get his hands on a few Puggy Pets. Puggy Pets are the hottest toys available now. He bought them for \$20 each. He was able to sell them at 45% markup to the department store. How much did Danny get for each Puggy Pet?



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15. Norma is getting ready for a national typing contest. During the contest she must type 30,000 words. She was able to finish $\frac{1}{4}$ of this in $\frac{1}{6}$ of an hour. How long will it take her to type all the words?

Your answer must be in minutes.



Mr. Barrett

Kuta Software - Infinite Pre-Algebra

Name _____

Markup, Discount, and Tax

Date _____ Period _____

Find the selling price of each item.

~~1) Cost of a sled: \$99.50~~

~~Markup: 95%~~

~~2) Cost of a comic book: \$3.95~~

~~Markup: 20%~~

3) Cost of an oil change: \$18.00

Markup: 70%

4) Cost of a CD: \$14.50

Markup: 30%

5) Cost of an MP3 player: \$129.50

Markup: 60%

6) Cost of an oil change: \$21.95

Markup: 65%

7) Cost of a pen: \$0.95

Markup: 60%

8) Cost of a computer: \$1,850.00

Markup: 75%

9) Original price of concert tickets: \$100.00

Discount: 21%

10) Original price of a book: \$18.50

Discount: 45%

11) Original price of a telescope: \$99.99

Discount: 13%

12) Original price of a CD: \$22.99

Discount: 5%

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13) Original price of a sled: \$99.50
Discount: 50%

14) Original price of a camera: \$554.99
Discount: 48%

15) Original price of a CD: \$17.00
Discount: 50%

16) Original price of a CD: \$22.95
Discount: 10%