Unit 1 Proportional Relationships

Review

NAME:_____

DATE:_____

The following are proportional. Fill in the blank for each unit rate.

1. Teri pays 4 dollars for 2 gallons of milk.

Teri pays 2 dollars for every gallon.

$\frac{4 \text{ dollars}}{2 \text{ gallons}} = \frac{2}{1}$

2.

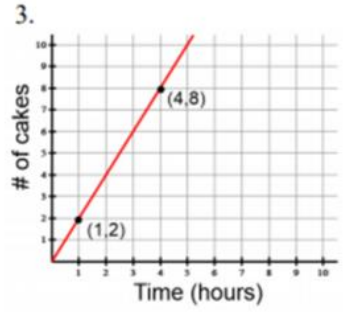
Lemonade (*ounces*)	8	10	24
Price (*dollars*)	4.80	6	14.40

$\frac{4.80}{8} = \frac{6}{10} = \frac{14.40}{24}$

0.6 0.6 0.6

Lemonade costs 0.6 dollars for every ounce.

3.



The chef bakes 2 cakes every hour.

$\frac{8}{4} = \frac{2}{1} \frac{\text{cakes}}{\text{hours}}$

4. The equation represents how much money the math club makes from selling sweatshirts where n is the number of sweatshirts and m is money.

$m = 18n$

The math club makes 18 dollars for every sweatshirt sold.

Determine if the following are proportional. Explain why or why not!

5.

x	y
5	4
15	12
12	9
20	16

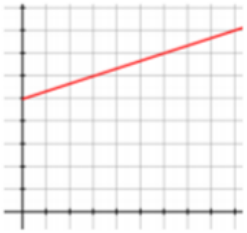
$\frac{4}{5} = \frac{12}{15} = \frac{9}{12} = \frac{16}{20}$

0.8 0.8 0.75 0.8

X

No, not the same constant of proportionality

6.



No, straight line but not thru the origin

Fill in the tables below.

7. Baby gains 2 pounds per month.

Time (*months*)	Weight (*pounds*)
1	2
2	4
3	6
10	20

8. Equation: $m = 8t$

Time (*hours*)	Money (*dollars*)
1	8
2	16
3	24
6	48

9. y is proportional to x

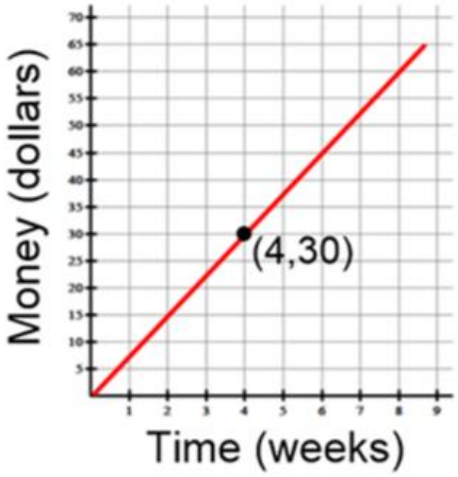
x	y
5	40
4	32
10	80
7	56

$\frac{32}{4} = 8$

$\frac{56}{7} = 8$

Use the graph to answer the questions.

10. Mr. Kelly gives his favorite kid an allowance. The graphs shows how much his favorite kid earns over time.



a. Find the constant of proportionality. $k = \frac{30}{4} = 7.5$

b. Use a sentence to explain what the constant of proportionality means in this situation.

Favorite kid earns 7.50 dollars every week.

c. Write an equation to represent the relationship between the amount of time and money earned.

$y = 7.5x$ or $m = 7.5w$

d. Explain what the point (4, 30) means in this situation.

Favorite kid earns 30 dollars every 4 weeks.

e. Explain what the point (0, 0) means in this situation.

In 0 weeks his favorite kid will earn 0 dollars.

f. Fill in the blank so that the point is on the graph. (1, 7.5)
Explain what this point means in this situation.

Favorite kid earns 7.50 dollars per week.

g. How much money would his favorite kid earn in 12 weeks?

$12 \cdot 7.50 =$ 90 dollars

h. How long will it take his favorite kid to earn 150 dollars?

$150 \div 7.50 =$ 20 weeks