

## ANSWERS ARE IN RED

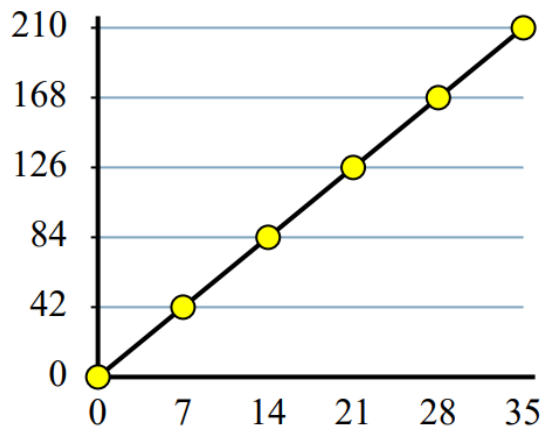
### TOPIC 2: Ratios & Rates – QUIZ STUDY GUIDE

- ★ Use your math notebook and your BBOM as resources.
- ★ Show all of your work and/or thinking.
- ★ HIGHLIGHT to organize information as needed.

1. BMS students sold candy for \$8.00 a box. Which statements are **false**? Select all that apply.

For every 3 boxes sold, the school earned \$24.00.	<b>True</b>	<b>False</b>
If Mrs. Alexander spent \$16.00 on candy, she bought 2 boxes.	<b>True</b>	<b>False</b>
If Mrs. Dahl bought 4 boxes, she paid \$32.00.	<b>True</b>	<b>False</b>
\$8.00 is the unit price for a box of candy.	<b>True</b>	<b>False</b>
When a student sells 5 boxes, they make \$50.00.	<b>True</b>	<b>False</b>

2. The graph below shows the relationship between the width and height of a photograph. Use the graph to determine the constant of proportionality **in simplified form**, then write the equation.



Constant of Proportionality:  $k = 6$

Equation:  $y = 6x$  **or**  $x \cdot 6 = y$

3. Your Smart Car's gas mileage is 40 mpg. How many gallons of gas did you use if you traveled 348 miles in your Smart Car?

You used 8.7 gallons of gas.



4. At the store, two brands of ice cream are sold. Breyer's Chocolate Crackle is offered as 1.5 quarts for \$5.49. Ben and Jerry's Chocolate Fudge Brownie is offered as 1.25 quart for \$4.59. Which brand is the better buy?

<b>Breyer's</b> 1.5 quarts for \$5.49	<b>Ben &amp; Jerry's</b> 1.25 quarts for \$4.59
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The better buy is the Breyer's Chocolate Crackle ice cream.

5. Jillian jogged  $1\frac{1}{2}$  miles in  $1\frac{1}{4}$  hour. At this rate, how long will it take her to jog  $7\frac{1}{2}$  miles to the park?

It will take Jillian  $6\frac{1}{2}$  hours to jog to the park.

6. Deborah is helping her mom hang trim in the house after school. At the end of each day, she counts how many feet of trim she hung and how long it took. Use the data in the table to calculate the two associated unit rates. *Be sure to change minutes to hours as needed.*

<b>Number of Feet</b>	84	60	116	168
<b>Time</b>	1 hrs 45 mins	1 hr 15 min	2 hr 25 min	3 hrs 30 min

- A) How many **feet per hour**?

Deborah hung 48 feet of trim per hour.

- B) How many **hours per foot**?

It took Deborah 0.02 of an hour, or 1.2 minutes, to hang 1 foot of trim.

7. Mrs. Alexander has trained her Chihuahua, Tamale, to swim laps. Tamale can swim  $\frac{1}{2}$  of a lap in  $1\frac{3}{5}$  minute. At this rate, how many laps can Tamale swim in  $4\frac{2}{5}$  minutes?

Tamale can swim 1.375, or  $1\frac{3}{8}$ , of a lap in  $4\frac{2}{5}$  minutes.

8. If a New York City taxicab gets 26 mpg and it has traveled 325 miles, how many gallons has the taxicab driver used?  
*Do not round your answer.*



The taxicab driver used 12.5 gallons of gas to travel 325 miles.

9. A local nursery has a sign showing the price of various quantities of tulip bulbs.



Bulbs	Cost
12	\$1.50
18	\$2.25
30	\$3.75

- a) Using the table, find the constant of proportionality from the table.

$$k = 0.125$$

- b) Write an equation that relates the number of bulbs,  $x$ , to the cost,  $y$ .

$$y = 0.125x \text{ or } 0.125 \cdot x = y$$

10. Farmer MacGregor is plowing his farmland. After  $\frac{1}{3}$  hour, he has plowed  $2\frac{1}{2}$  acres of farmland. What is the rate in **acres per hour** at which he plows the farmland? *Write your answer as a mixed number in simplest form.*

Farmer MacGregor plows 7.5 acres per hour.