

Name Key

Date _____

Accelerated 6th Grade Math - Assessment 11 Review Guide
 7.RP.1 Unit Rates with Fractions & 7.RP.2 Proportional Reasoning (calculator allowed)

1. What is the unit rate that represents a train traveling 405 miles in 8 1/2 hours? Show your work.

$$\frac{405 \text{ mi}}{8\frac{1}{2} \text{ hrs}} = 47.6 \text{ mph}$$

2. Below are the prices of soda at four different stores. Which store has the better deal? Show your work and explain your answer. (3-point question: 1 point for your answer, 1 point for showing your work, and 1 point for explaining.)

- STORE A: \$14.50 for 8 bottles of soda = $\$14.50 \div 8 = \1.8125 per bottle
- STORE B: \$11.99 for 7 bottles of soda = $\$11.99 \div 7 = \1.713 per bottle
- STORE C: \$17.25 for 10 bottles of soda = $\$17.25 \div 10 = \1.725 per bottle
- STORE D: \$15.48 for 9 bottles of soda = $\$15.48 \div 9 = \1.72 per bottle

Store B because it has the lowest unit price.

3. Which size bag of M&Ms shown in the table has the lowest unit price? Justify your answer. (This will be a 3-point question, where 2 points will be for your justification. Be thorough!)

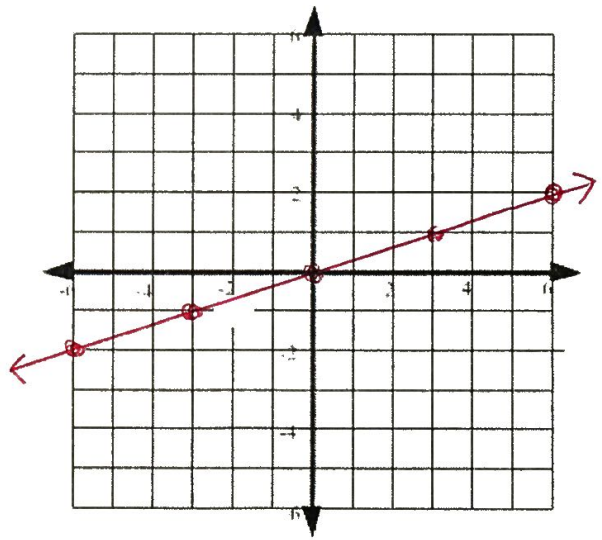
Size (oz)	Cost (\$)
12	1.50
20	2.59
32	4.10

$\$1.50 \div 12 = \0.125
 $\$2.59 \div 20 = \0.1295
 $\$4.10 \div 32 = \0.128125

The 12 oz. for \$1.50 has the lowest unit price.

4. **Part A:** Complete the table using the rule, then graph your table of values: $y = \frac{1}{3}x$

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



Part B: What is the constant of proportionality? $\frac{1}{3}$

5. The amount a person weighs on Earth is proportional to the amount that the person weighs on the moon. If you weigh 228 pounds on Earth, then you would weigh 38 pounds on Mars. Which of the following can be used to justify this proportional relationship? Select ALL that apply. Show how you determined your answer.

- 90 lbs. on Earth; 15 lbs. on the moon $90 \div 15 = 6$
- 235 lbs. on Earth; 35 lbs. on the moon $235 \div 35 = 6.7$
- 162 lbs. on Earth; 27 lbs. on the moon $162 \div 27 = 6$
- 195 lbs. on Earth; 39 lbs. on the moon $195 \div 39 = 5$

$228 \div 38 = 6$

6. **Part A** Fill in the table to show the coordinates for figure B using the rule $(4x, 4y)$.

Figure A: (x, y)	Figure B: $(4x, 4y)$
(1, 3)	(4, 12)
(5, 8)	(20, 32)
(4, 9)	(16, 36)

Part B What is the scale factor from Figure A to Figure B? 4

7. Write an equation that can be used to model the proportional relationship between the length of a side in the smaller shape, x , with the side length in the larger shape, y .



$$\frac{59.6 \text{ in}}{14.9 \text{ in}} = 4$$

$$y = 4x$$

8. **Part A** Using the graph on the right, describe what the point $(3, 30)$ means in terms of the situation.

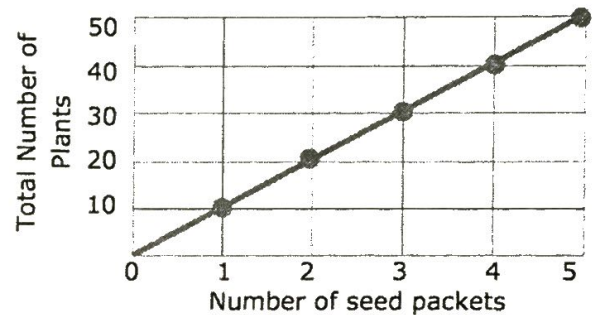
In 3 seed packets, there will be 30 plants.

Part B What is the unit rate of the graph? Use words, symbols, or both to explain how you determined your answer.

10 plants per seed packet

Part C What is the ordered pair that shows this unit rate?

$(1, 10)$



9. In the equation $y = 9.5x$, what is the constant of proportionality?

a) x

b) $9.5x$

c) 9.5

d) y

10. Write an equation to represent the relationship between x and y .

$$y = -7x$$

x	y
1	-7
2	-14
3	-21

$$\begin{aligned} \frac{-7}{1} &= -7 \\ \frac{-14}{2} &= -7 \\ \frac{-21}{3} &= -7 \end{aligned}$$

11. Tell whether each equation or table represents a proportional relationship. Justify your responses.

~~a) $x - y = 40$~~
NO

b) $y = 3x$
YES

c) $x = 6.2y$
YES

~~d) $y = 2x + 5$~~
NO

e) $d = 6t$
YES

B, C, & E are proportional because they are in the form $y = kx$ (or can be written that way).