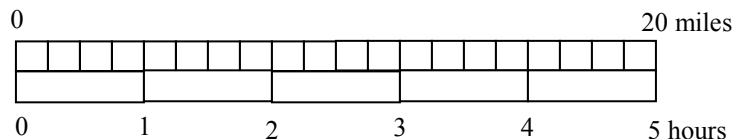# Math 7/Unit 03 Practice Test: Ratio and Proportional Relationships

Name:

Date:

(1 – 4) Define the terms below and give an example of each.

1. ratio

2. proportion

3. On a map, the legend might indicate 1 inch represents 25 miles; write that ratio in three different ways.

4. Express the ratio in simplest form: 36 to 54

5. Write 3 different equivalent ratios to $\dfrac{11}{4}$.

6. Use the tape diagram below to determine the two unit rates.

7. Donna hikes $\dfrac{1}{3}$ mile every $\dfrac{1}{6}$ hour. **Draw a model** to show how many miles she hikes in one hour <u>and</u> how much time it takes her to hike 1 mile.
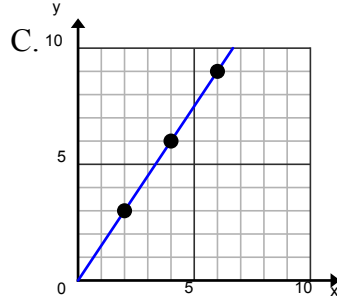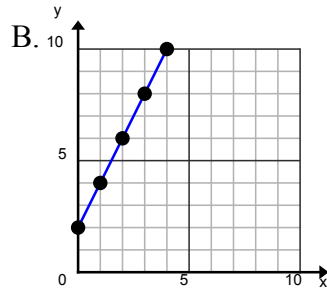
8. 7 ounces of crackers sell for $1.19, what is the unit rate?

9. Determine which of the following **are** or **are not** in a proportional relationship?

A.

x	y
4	5
5	6
6	7
7	8

B.

C.

D.

_____   _____   _____   _____
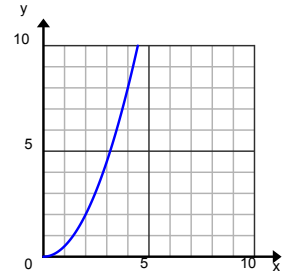
10. Determine if the ratios $\dfrac{5}{8}$ and $\dfrac{7}{14}$ are proportional.

11. Tell whether the relationship is a proportional relationship. If so, give the constant of proportionality.

Number of gallons	2	6	9	12
Total Cost ($)	$7.00	$21.00	$31.50	$42.00

12. A proportion is shown below.

$$\frac{2}{5} = \frac{12}{p}$$

What value of *p* makes the proportion true?

A 4.8
B 15
C 19
D 30

13. Three pounds of peaches cost $1.68. How much would $2\frac{1}{2}$ lb of peaches cost? Show your work.

14. A group decides to go white-water rafting on a river. The map they have of the river has the scale 3 inches: 7 miles. On the map, the distance between the starting point and the end point if their trip is 15 inches. What is the actual distance?

15. A one day admission ticket to Disneyland costs $96.00. The table shows the number of tickets purchased and the total cost for the tickets. Which of the following must be true about the data in the table?

# of tickets purchased	1	2	3	4	5
Total Cost (in dollars)	$96.00	$192.00	$288.00	$384.00	$480.00

   A.   The ratio of the total cost to the number of tickets is 96 : 1.
   B.   The ratio of the number of tickets to the total cost is 96 : 1.
   C.   The total cost is always 96 .greater than the number of tickets.
   D.   The number of tickets is always 96 times the total cost.

16. Jeremy estimates that he can paint 3 average size rooms in one hour. Follow the directions below and determine if the relationship between the number of rooms and the number of hours is proportional or not.
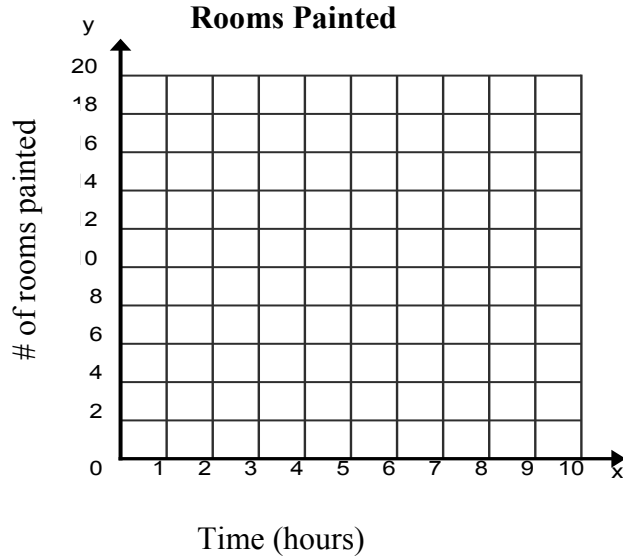
   A. Complete the table below.

Time (hours)	1	2	5		11
Total # of rooms				18	

   B. Based on the table, how do you know if this is or is not a proportional relationship? Explain your answer._____
   _____
   _____

C. Plot the data from the table.

Rooms Painted

y

20
18
6
4
2
0
8
6
4
2
0

# of rooms painted

0   1   2   3   4   5   6   7   8   9   10   x

Time (hours)

D. Based on the graph, how do you know if this is or is not a proportional relationship? Explain your answer._____

_____

_____

17. Two liquid containers are being filled. Liquid enters the first container at a rate of $\frac{3}{5}$ gallons per $\frac{1}{4}$ minute. Liquid pours into the second container at the rate of $\frac{2}{3}$ gallon per $\frac{1}{6}$ minute. Show your work and determine which container is being filled faster.

18. On a scale drawing of a submarine, each 0.5 cm represents 3 m on the actual submarine. What length on the submarine is represented by 3 cm on the drawing?

19. If $\frac{1}{4}$ in represents 5 yd, how long must a drawing be to represent a football field that is 100 yd long?

Long term memory review:

20. Evaluate the expression $4ab - c$, *if* $a = 3$, $b = 7$, *and* $c = -5$.

21. Solve for *x*. $3x = \dfrac{-2}{3}$

22. Simplify.

        a. $-5 + -7 =$

        b. $6.5 - (-3.9) =$

        c. $(-7)(-8) =$

        d. $\dfrac{-3}{4} \div \dfrac{1}{2} =$