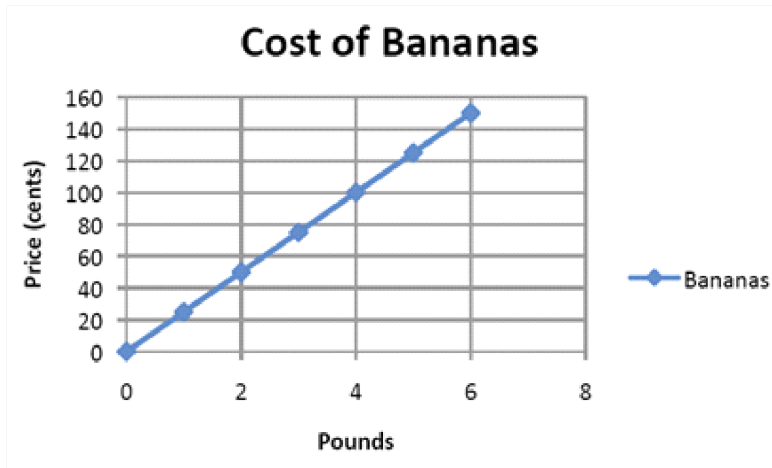Name: _____ Date: _____ Period: _____

Proportions and Percents Unit Test

Show all work and explain with words when required. Include units for all word problems. Circle final answers.

Use the graph below to answer questions #1 & 2.

Cost of Bananas

1. What is the constant of proportionality? Write an equation for the graph.

2. What does the constant of proportionality represent in this situation?

3. Determine if the ratio table for making chocolate kisses below is proportional. Explain how you used the table to get your conclusion. If the table displays a proportional relationship, write an equation for it.

| Chocolates	2	4	6	8
Minutes	4	8	12	16

4. Create a graph for the table below, then determine if the set is proportional. Explain how you used your graph to get your conclusion.

x	1	3	5	7
y	2	4	6	8

Proportions and Percents Unit Test

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5. Snail Tom's speed is represented by the equation d = 0.55h. Snail Jerry's pace is represented by the graph below. Which snail is moving by a faster rate? How much faster is the snail moving? (d = distance in miles, h represent time in hours)

A Snail's Pace
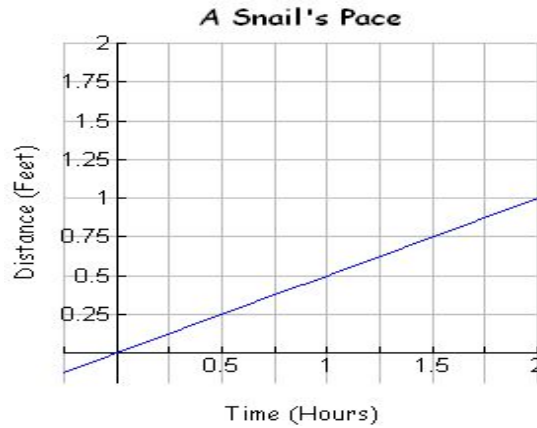
For questions #6 - 11, write a proportion and then solve it, using any method, to find the answer. Circle your final answers.

6. If the ratio of males to females in the coed softball league is 5:7, and there are 132 players in the league, how many are female?

7. Maggie drove 369.3 miles in 6 hours at a constant speed. How long will the trip have taken altogether if she drove another 123.1 miles?

8. Eight oranges cost $3.00. How much will 5 **dozen** oranges cost?

9. 6-foot tall Grant casts a 96 inch shadow. At the same time of day, his friend Jaden casts a shadow that is 1 foot shorter than his. How tall, in feet, is Jaden?

Proportions and Percents Unit Test

Show all work and explain with words when required. Include units for all word problems. Circle final answers.

10. At the same time that a flagpole casts a 4.5 meter shadow, a meter stick casts a 1.5 meter shadow. How tall is the flagpole?

11. In the scale drawing for Joan's new house, the dimensions of her bedroom are 4 inches by 5 inches. If the actual length of the longer side of the bedroom is 15 feet, what is the **area** of her bedroom?
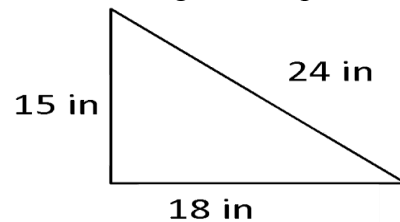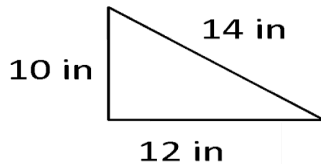
    A. 180 sq ft   B. 75 sq ft   C. 20 sq ft   D. 12 sq ft

12. Solve for n. $\dfrac{6}{n-2} = \dfrac{9}{15}$

13. Compare the triangles below. Which best describes these two figures? Explain/show proof.

    A. Congruent, but not similar.
    B. Similar, but not congruent.
    C. Congruent and similar.
    D. Neither congruent nor similar.

14. Triangle ABC is similar to Triangle DEF. Segment AB = 15 cm. Segment DE = 5 cm. Segment AC = 9 cm. Find the length of Segment DF (**Hint** Draw a picture).

Proportions and Percents Unit Test

Show all work and explain with words when required. Include units for all word problems. Circle final answers.

15. Triangle FGH is congruent to Triangle RTU. If $\angle G = 49°$ and $\angle U = 87°$, what is the measure of $\angle F$?

    A. 40°   B. 44°   C. 93 °   D. 136°

16. Two tables shaped like triangles are similar. The measure of one of the larger tables' angles is 38°, and another angle is half that size. What are the measures of all the angles at the smaller table? (**Hint** Draw a picture)

    Bonus: Explain which of the following is not always true if two figures are similar.

A. They have the same shape.
B. They have the same size.
C. Their corresponding sides have proportional lengths.
D. Their corresponding angles are congruent.

_____

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