LEARNING ACTIVITY SHEET **GRADE 9 Mathematics**

Name: _____ **Date:** _____ **Rating/Score:** ___

Activity 1: Choose Me Up!

Directions: Write the letter of the best answer on the blank provided before each number.

_____1. It is the relationship of two quantities of the same kind expressed by dividing one quantity by another.

A. Rate
B. Ratio
C. One to One relationship
D. Proportion

____2. It is a statement that ratios are equal

A. Rate
B. Ratio
C. Proportion
D. One to One relationship

____3. If $x:y = 4:3$, evaluate $4x + y : 8x + y$

A. $\frac{-19}{35}$ B. $\frac{19}{35}$ C. $\frac{-35}{19}$ D. $\frac{35}{19}$

____4. If $x:y = 6:4$, find $2x + 2y : 3x$.

A. $\frac{7}{9}$ B. $\frac{9}{7}$ C. $\frac{9}{10}$ D. $\frac{10}{9}$

____5. Two triangles are similar if

A. two angles of one triangle are congruent to the two angles of another triangle.
B. two sides of one triangle are congruent to two sides of another triangle.
C. one angle of one triangle is congruent to one angle of another triangle.
D. one side of one triangle is congruent to one side of another triangle.

____6. Solve for the ratio $a:b \; if \; a^2 + 3ab - 10b^2 = 0$.

A. -5 or -2 B. 5 or 2 C. -5 or 2 D. 5 or -2

____7. If a line parallel to one side of a triangle intersects the other two sides, then it divides

A. the triangle proportionally.
B. the triangle equally.
C. those sides equally.
D. those sides proportionally.

Specific Week: Week 5 and 6

Target Competency: Describes a proportion (M9GE-IIIf-360, applies the fundamental theorems of proportionality to solve problems involving proportions (M9GE-IIIf- 37), illustrates similarity of figures (M9GE-IIIg-38)

Note to the Teacher: This LAS is designed to develop the students' comprehension and understanding about the application of the fundamental theorems of proportionality to solve problems and similarity of figures. Reference: Learners' Material, pages 356-368.

____8. It is a theorem which states that if a line is parallel to one side of a triangle that intersects the other sides at two distinct points, then that line divides those sides proportionally.

A. Fundamental Theorem of Proportionality
B. Pythagorean Theorem
C. The Binomial Theorem
D. Isosceles Triangle Theorem

____9. A theorem which states that the sum of the squares of the legs of a right triangle is equal to the square of its hypotenuse.

A. Fundamental Theorem of Proportionality
B. Pythagorean Theorem
C. The Binomial Theorem
D. Isosceles Triangle Theorem

____10. Find the value of x if $\frac{a}{1} = \frac{b}{2} = \frac{c}{3} = \frac{5a-6b-2c}{x}$

A. -13 B. -14 C. -15 D. -16

____11. Two triangles are similar if and only if the corresponding angles are congruent, and the corresponding sides are _____.

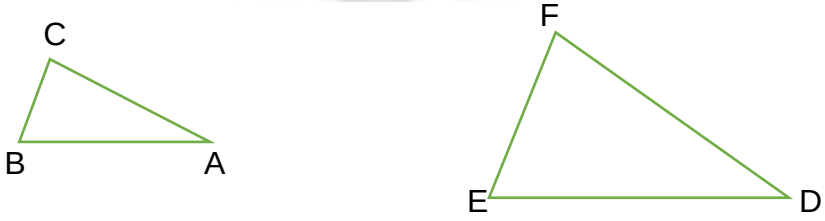
A. Congruent B. equal C. parallel D. proportional

____12. Which of the following symbols means “is similar to”?

A. ⊥ B. // C. ~ D. ∞

____13. If △BC ~ △EF, then ∠ A ≅ ∠ D, ∠ B ≅ ∠ E, ∠ C ≅ ∠ F, and $\frac{AB}{DE} = \frac{BC}{EF}$ =?

A. $\frac{AC}{DF}$ B. $\frac{AC}{EF}$ C. $\frac{AC}{DE}$ D. $\frac{DF}{AC}$



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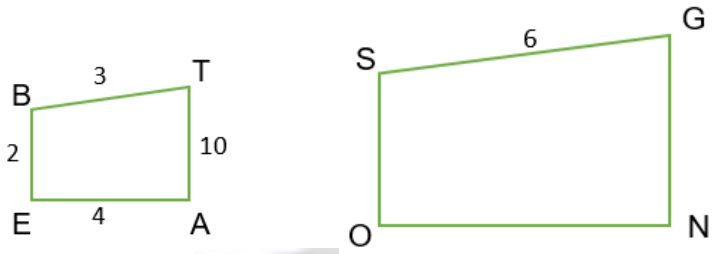
____14. If quadrilateral BEAT is similar to quadrilateral SONG as shown below, then we can establish the following relationships: ∠B ≅∠S, ∠E ≅ ∠O, ∠A ≅∠N, ∠T ≅ ∠ G, and $\frac{BE}{SO} = \frac{EA}{ON} = \frac{AT}{NG} = -?$

A. $\frac{SO}{AT}$ B. $\frac{BT}{SG}$ C. $\frac{ON}{BT}$ D. $\frac{SO}{BT}$



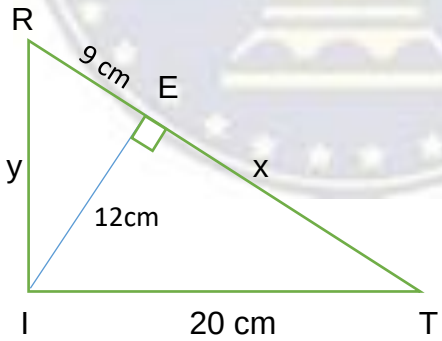
____15. What is the common ratio in problem 14?

A. $\frac{1}{2}$ B. $\frac{1}{3}$ C. $\frac{1}{4}$ D. $\frac{1}{5}$

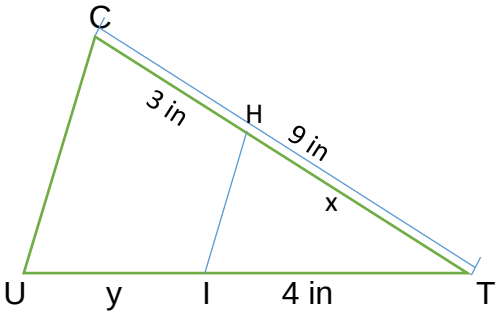
Activity 2: It's Showtime!

Each pair of polygons is similar. Find the values of x and y. Use the space provided on the right side for your solutions.

1. ΔREI ~ Δ IET ***Solutions:***



2. ΔCUT ~ Δ HIT ***Solutions:***



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Activity 3: Show More What You've Got!

Solve the following problems. Write your solution below.

1. A quadrilateral has sides 6 cm, 10 cm, 18 cm, and *a* cm. A quadrilateral similar to this has the corresponding sides b, c, 36 cm, and 48 cm. Find a, b, and c.

2. A 3'' x 5'' picture is to be enlarged such that its new length is five times the width of the original picture. Find the dimensions of the enlarged picture.

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ANSWER KEY:

ACTIVITY 1	ACTIVITY 2	ACTIVITY 3
1. B	1. x = 7	1. a = 24
2. C	y = 15	b = 12
3. B	2. x = 6	c = 20
4. D	y = 2	2. w = 9 in
5. A		L = 15 in
6. C		
7. D		
8. A		
9. B		
10. A		
11. D		
12. C		
13. A		
14. B		
15. D		

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