Unit 8 UNIT REVIEW: Similarity

Name: _____

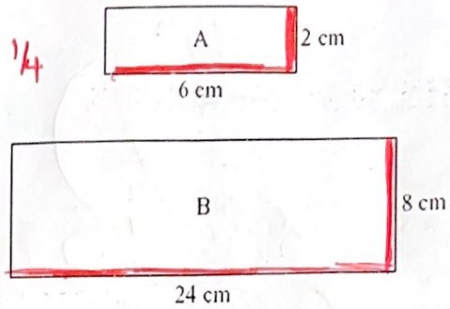
order matters

1. What is the scale factor of Rectangle A to Rectangle B?

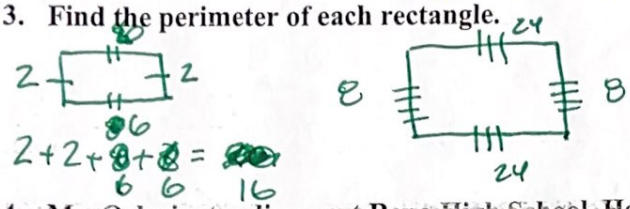
   $2/8 = 1/4$ or $6/24 = 1/4$

2. Would it change if I asked Rectangle B to Rectangle A?

   $8/2 = 4/1$ or $24/6 = 4/1$



3. Find the perimeter of each rectangle.



4. Mr. Ochs is standing next Reno High School. He is 6 feet tall and casts a shadow of 8 feet. If the height of the school is 45 foot, determine the shadow the school casts onto the ground.

   $\frac{\text{height}}{\text{shadow}}$

   Ochs School

   $\frac{6}{8} = \frac{45}{x}$

   $\frac{3}{4} = \frac{45}{x}$ → Cross Multiply

   $3(x) = 4(45)$

   $3x = 180$

   $x = 60$ ft

5. List all the pairs of congruent angles and fill in the corresponding sides.

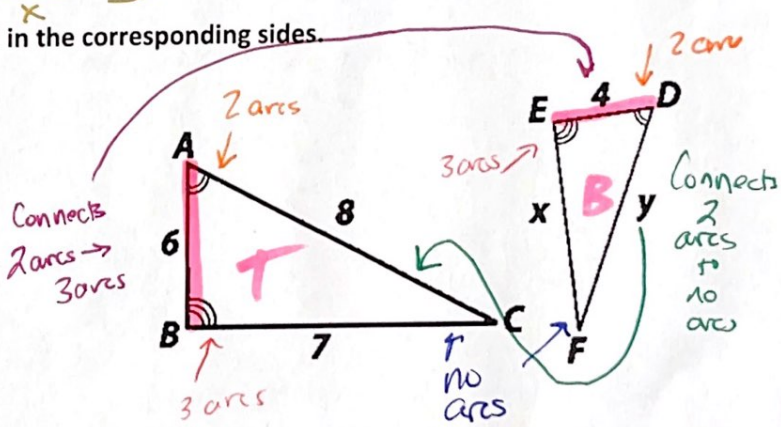
   $< A \cong$ ∠D

   $< B \cong$ ∠E

   $< C \cong$ ∠F

   Sides:

   $\frac{AB}{ED} = \frac{AC}{DF} = \frac{BC}{EF}$



6. Solve for x and y for the triangles above if $\Delta ABC \sim \Delta DEF$.

   $SF = \frac{6}{4} = \frac{3}{2}$

   $\frac{3}{2} = \frac{8}{y}$

   $3y = 16$ $\quad y = \frac{16}{3} = 15.3$

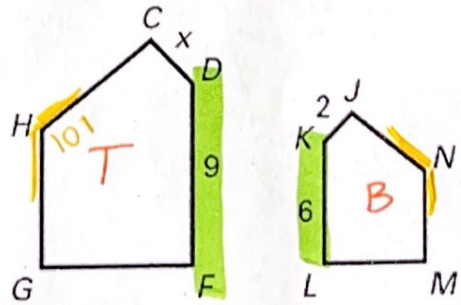
   $\frac{3}{2} = \frac{7}{x}$

   $3x = 14$ $\quad x = \frac{14}{3} = 4.67$

7. Polygon GHCDF ~ Polygon MNJKL, solve for x.

   a) Find the scale factor.

   $\frac{9}{6} = \frac{3}{2}$



8. If $m < CHG = 101°$, what angle would be congruent If the polygons are similar.

   ∠N

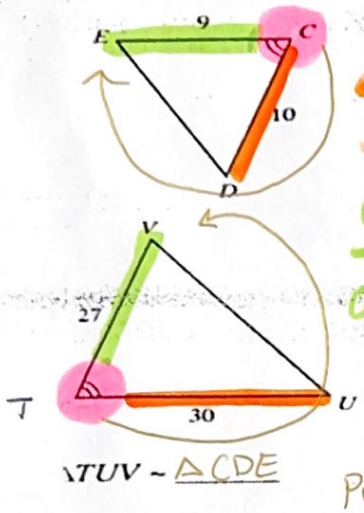
   a) What side is proportion to MN.

   $\overline{GH}$ FIRST TWO LETTERS

Determine if the following triangles are SIMILAR If so, explain using similarity AA, SSS, or SAS. Complete the similarity statement.

Need to be same ratio

9)



$\cong$ Angle

SAS

$\frac{9}{27} = \frac{1}{3}$

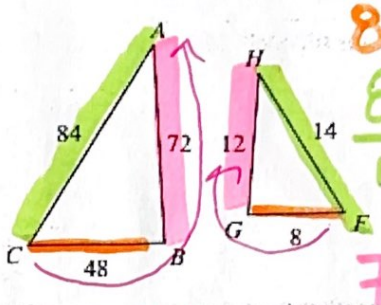
$\frac{10}{30} = \frac{1}{3}$

Need to be the same ratio

$\triangle TUV \sim \triangle CDE$

Pink → orange → blank

10)



$\frac{48}{8} = \frac{6}{1}$

$\frac{84}{14} = \frac{6}{1}$

$\frac{72}{12} = \frac{6}{1}$

$\triangle CBA \sim \triangle FGH$

Orange → Pink

SSS

Solve the following Proportions by cross multiplying.

11) $\frac{7}{9} = \frac{b}{b-10}$

$9(b) \quad 7(b-10)$

$9b = 7b - 70$

$-7b \quad -7b$

$\frac{2b}{2} = \frac{-70}{2}$

$b = -35$

12) $\frac{9}{k-7} = \frac{6}{k}$

$9(k) = 6(k-7)$

$9k = 6k - 42$

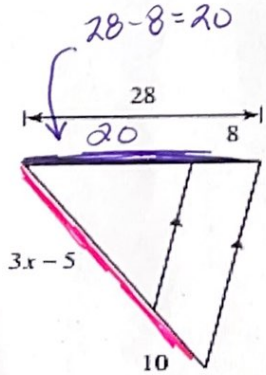
$-6k \quad -6k$

$\frac{3k}{3} = \frac{-42}{3}$

$k = -14$

For 13 and 14, Find the value of the missing variable.

13.



$28 - 8 = 20$

SIDE : SIDE

$\frac{3x-5}{10} = \frac{20}{8}$

Reduce

$\frac{3x-5}{10} = \frac{5}{2}$

$5(10) \quad 2(3x-5)$

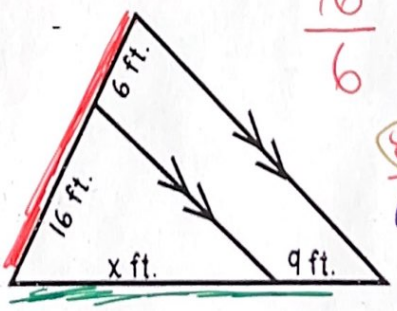
$50 = 6x - 10$

$+10 \quad +10$

$60 = 6x$

$x = 10$

14.



$\frac{16}{6} = \frac{x}{9}$

$\frac{8}{3} = \frac{x}{9}$

$3x = 72$

$x = 24$