

Chapter 8 Review Guide

Name: _____ Date: _____

Solve to get $\frac{x}{y} = \text{something}$ if x and y inside () distribute first

if x and y outside of parentheses divide by () or #

equation: $2(x-18) = 3(y-12)$
 $2x - 36 = 3y - 36$
 $2x = 3y$
 $\frac{x}{y} = \frac{3}{2}$

look to see if same constant on both sides *get rid of constant

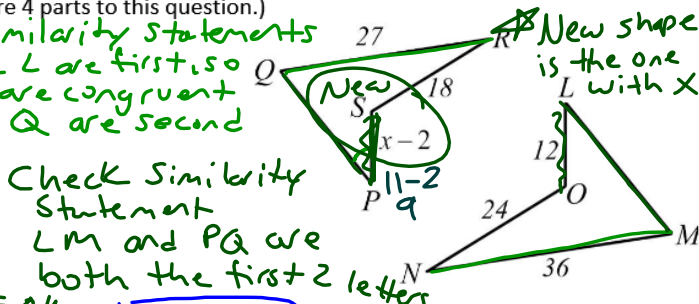
3.) In the diagram, $LMNO \sim PQRS$. Complete the proportions and congruence statements.

(Note: This is NOT multiple choice! There are 4 parts to this question.)

a.) $\angle P \cong \angle L$ *look to Similarity Statements
 b.) $\angle M \cong \angle Q$ *Both P and L are first, so those angles are congruent. Both M and Q are second

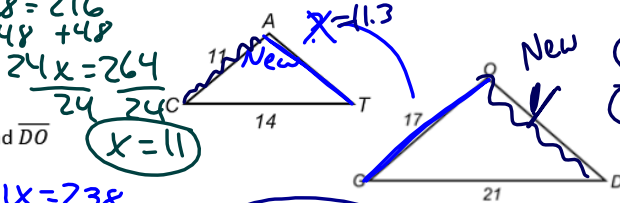
c.) Complete the proportion: $\frac{MN}{RQ} = \frac{LM}{PQ}$

d.) Find the value of x. Put side with x on top and matching side on bottom. $\frac{x-2}{12} = \frac{18}{24}$
 $24(x-2) = 12 \cdot 18$
 $24x - 48 = 216$
 $24x = 264$
 $x = 11$



4.) If $\triangle CAT \sim \triangle DOG$, find:

(a) The length of \overline{AT} and \overline{DO}
 (b) The ratio of the perimeters of $\triangle CAT$ to $\triangle DOG$.



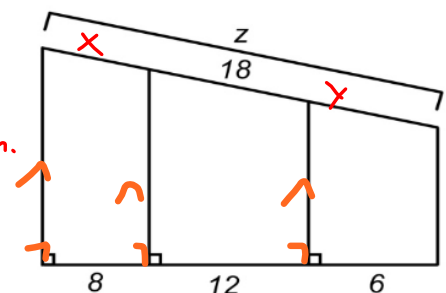
Perimeter is distance around add all outside sides

$P_{CAT} = 36.3$ $P_{DOG} = 54.5$
 Ratio is $36.3 : 54.5$
 cat to dog

5.) Using the figure to the right

(a) What theorem can be applied here?
 Extension to Side Splitter Thm.

(b) Find the value of z.



$\frac{12}{18} = \frac{8+12+z}{z}$
 $12z = 18(26)$
 $12z = 468$
 $z = 39$

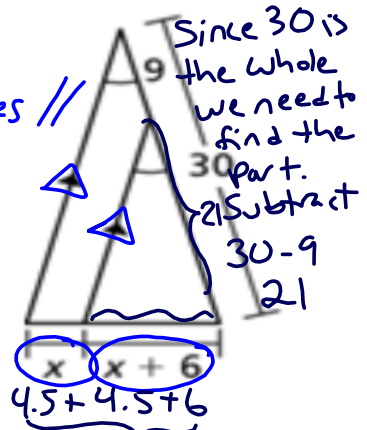
OR Do it part by part
 $\frac{x}{8} = \frac{18}{12}$ and $\frac{y}{6} = \frac{18}{12}$
 $12x = 144$ $12y = 108$
 $x = 12 + 18 + y = 9$

lines parallel b/c corresponding angles \cong

6.) Using the figure to the right

(a) What theorem can be applied here?

Side Splitter Theorem if lines // then $\frac{\text{Part}}{\text{Part}} = \frac{\text{Part}}{\text{Part}}$



(b) Find the value of x.

Cross multiply to get rid of ()

$$9(x+6) = 21x$$

$$9x + 54 = 21x$$

$$-9x \quad -9x$$

$$54 = 12x$$

$$\frac{54}{12} = \frac{12x}{12}$$

$$4.5 = x$$

7.) Given: $\triangle SEA \sim \triangle TBA$.

If triangles

Similar Angles are \cong . Since $\angle S \cong \angle T$ and they are corresponding angles, $\overline{TB} \parallel \overline{SE}$. We can use side splitter for side x but not for y b/c it is not a side being split. Redraw similar triangles to find full.

(b) Find the values of x and y. Round your answers to the nearest hundredth.

Set up ratios X over same side = same part as our other part

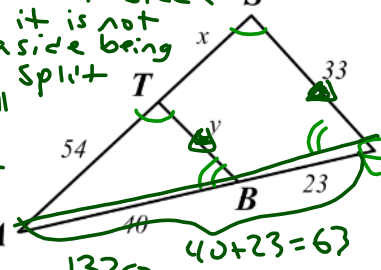
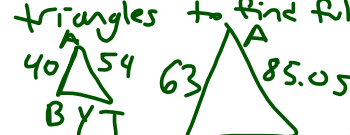
$$\frac{x}{54} = \frac{23}{40}$$

$$40x = 54 \cdot 23$$

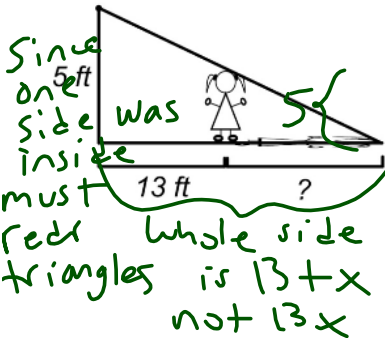
$$40x = 1242$$

$$\frac{40x}{40} = \frac{1242}{40}$$

$$x = 31.05$$



8.) A 5-foot-tall girl is standing 13 feet away from a 15-foot-tall lamppost. How long is her shadow?



$$\frac{x}{13+x} = \frac{5}{15}$$

$$15x = 5(13+x)$$

$$15x = 65 + 5x$$

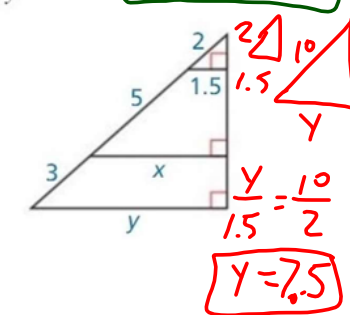
$$-5x \quad -5x$$

$$\frac{10x}{10} = \frac{65}{10}$$

$$x = 6.5 \text{ ft shadow}$$

$$\frac{x}{1.5} = \frac{7}{2}$$

$$x = 5.25$$



10.) Your friend is hitting a golf ball toward the hole. The line from your friend to the hole bisects the angle. How far is the hole from the oak tree?

(a) What theorem can be applied here?

Triangle Angle Bisector Theorem

(b) Find the value of x.

$$\frac{x}{225} = \frac{250}{375}$$

$$x = 150$$

The hole is 150 yds from the oak tree

