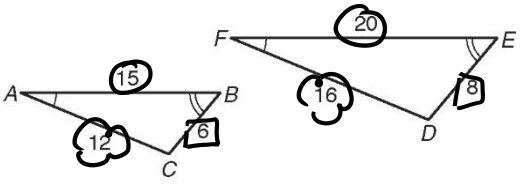
GEOMETRY NAME:_

DAY 7 - 7.3 DAY 2 HOMEWORK

1. Name the congruent angles and corresponding sides.



Angles

$\angle A \cong \angle F$

$\angle B \cong \angle E$

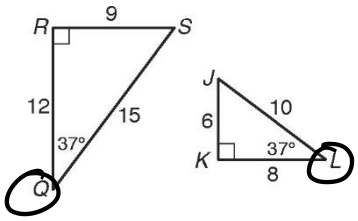
$\angle C \cong \angle D$

Sides

$\frac{AB}{FE} = \frac{BC}{ED} = \frac{CA}{DF}$

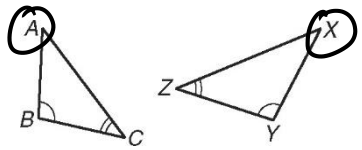
2. **Circle** the correct similarity statement.

$\triangle QRS \sim \triangle KJL$ $\quad$ **$\triangle RSQ \sim \triangle KJL$** $\quad$ $\triangle QSR \sim \triangle LKJ$



3. Explain why the triangles are similar and write a similarity statement. **Show the sides are proportional if necessary.**

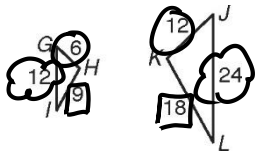
a.)



Reason: AA~

Similarity Statement: $\triangle ABC \sim \triangle XYZ$

b.)



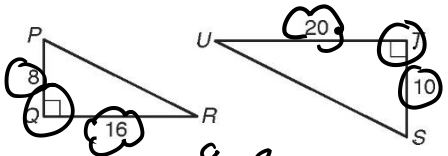
$\frac{6}{12} \stackrel{?}{=} \frac{9}{18} \stackrel{?}{=} \frac{12}{24}$

$\frac{1}{2} = \frac{1}{2} = \frac{1}{2}$

Reason: SSS~

Similarity Statement: $\triangle GHI \sim \triangle JKL$

c.)



$\angle Q \cong \angle T$

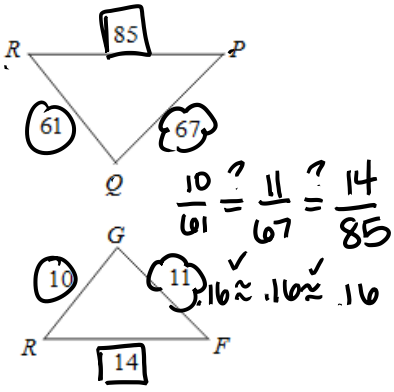
$\frac{8}{10} \stackrel{?}{=} \frac{16}{20} \Rightarrow \frac{4}{5} \stackrel{\checkmark}{=} \frac{4}{5}$

Reason: SAS~

Similarity Statement: $\triangle PQR \sim \triangle STU$

4. Determine if the following polygons are similar. If they are, state the reason and complete the similarity statement.

a.)



$\frac{10}{61} \stackrel{?}{=} \frac{11}{67} \stackrel{?}{=} \frac{14}{85}$

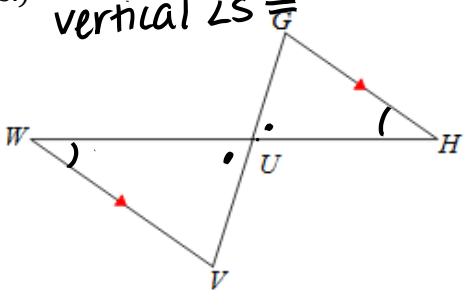
$.16 \approx .16 \approx .16$ ✓

$\triangle RQP \sim \triangle RGF$

Reason: SSS~

b.)

IF lines // alt. int $\angle$s $\cong$ OR vertical $\angle$s $\cong$

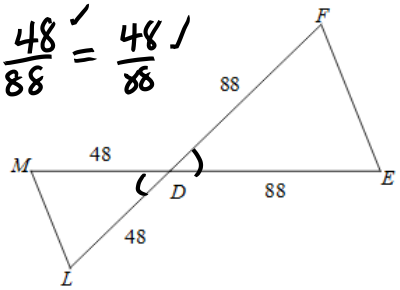


$\triangle UVW \sim \triangle UGH$

Reason: AA~

c.)

① vert. $\angle$s $\cong$



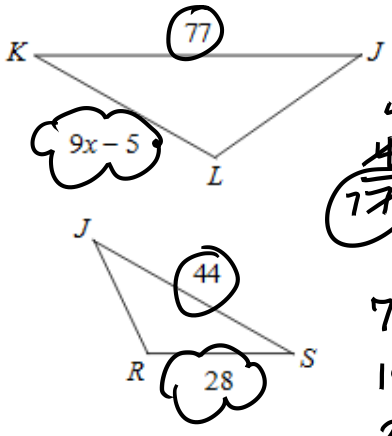
$\frac{48}{88} \stackrel{\checkmark}{=} \frac{48}{88}$

$\triangle DEF \sim \triangle DLM$ or $\triangle DML$

Reason: SAS~

5. The triangles in each pair are similar. Solve for x.

a.) $\triangle JKL \sim \triangle JSR$



$\frac{4}{7}$ $\frac{44}{77} = \frac{28}{9x-5}$

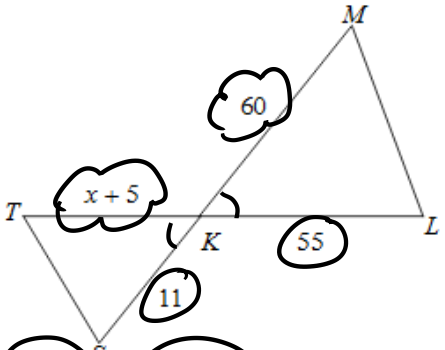
$7(28) = 4(9x-5)$

$196 = 36x - 20$

$216 = 36x$

$x = 6$

b.) $\triangle KLM \sim \triangle KST$



$\frac{11}{55} = \frac{x+5}{60}$

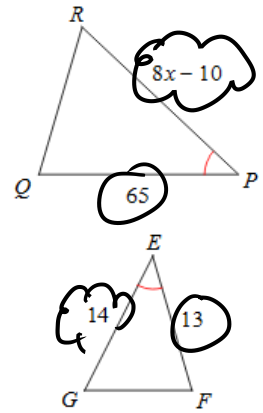
$60 = 5(x+5)$

$60 = 5x + 25$

$35 = 5x$

$x = 7$

c.) $\triangle PQR \sim \triangle EFG$



$\frac{5}{13} = \frac{8x-10}{14}$

$5(14) = 13(8x-10)$

$70 = 8x - 10$

$80 = 8x$

$x = 10$

Solve each proportion.

6. $\frac{x^2}{18} = \frac{x}{6}$

$18x = 6x^2$

$0 = 6x^2 - 18x$

$0 = 6x(x-3)$

$6x = 0 \quad \text{or} \quad x - 3 = 0$

$x = 0 \text{ or } x = 3$

7. $\frac{16}{x-1} = \frac{x-1}{4}$

$64 = (x-1)(x-1)$

$64 = x^2 - 2x + 1$

$0 = x^2 - 2x - 63$

$0 = (x-9)(x+7)$

$x = 9, \; x = -7$