

# SIMILARITY

- 1) All angles are congruent ( $\cong$ )
- 2) All sides are proportional (Not have to be  $\cong$ )

Similar means

## (Back side)

→ Similarity Statement

ex:  $\triangle PIE \sim \triangle HOG$

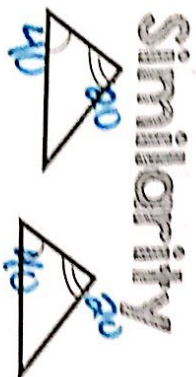
$\overline{PI}$  is prop. to  $\overline{HO}$

$\angle P = \angle H$

$\overline{IG}$  is prop. to  $\overline{GP}$

$$\frac{PI}{HO} = \frac{GH}{GP}$$

## AAA



If two angles of one triangle are congruent to two angles of another triangle, then the triangles are similar.

## SAS



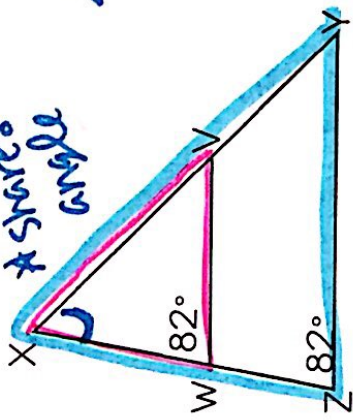
In two triangles, if a pair of corresponding angles is congruent and the sides including the angle are proportional, then the triangles are similar.

## SSS



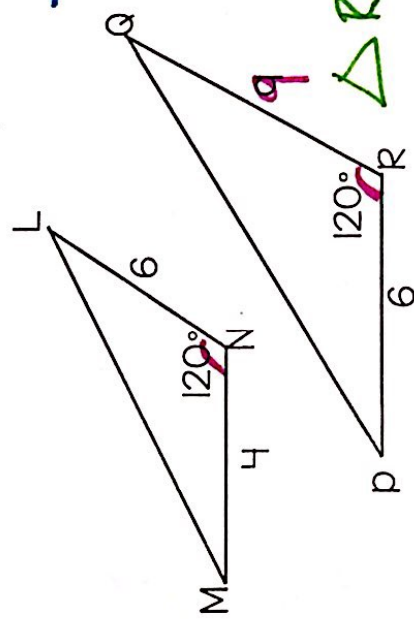
If all three pairs of corresponding sides of two triangles are proportional, then the two triangles are similar.

EX 1: Are the two triangles similar? If so, state how and write a similarity statement.



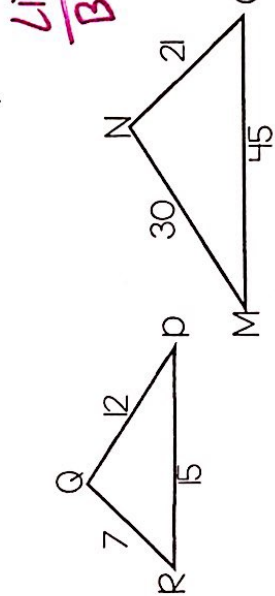
$\Delta XWV \sim \Delta XZY$

EX 3: Are the two triangles similar? If so, state how and write a similarity statement.



$\frac{6}{9} = \frac{4}{6}$   
 $\frac{2}{3}$   
 $\Delta RPQ \sim \Delta NML$

EX 5: Are the two triangles similar? If so, state how and write a similarity statement.

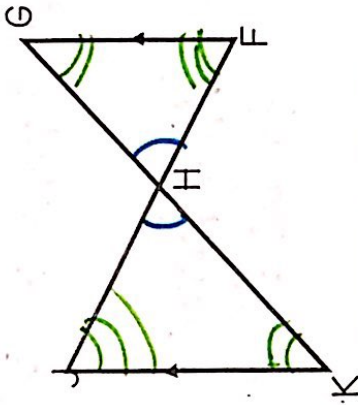


Little  
Big

$\frac{15}{45} = \frac{7}{21} = \frac{12}{30} =$

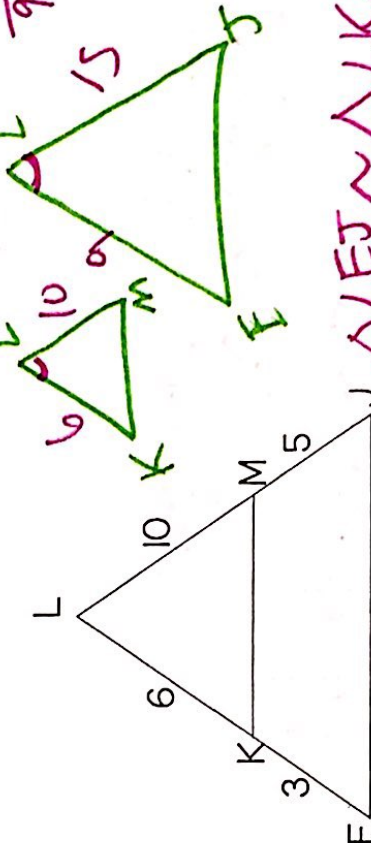
NOT similar  
 similar

EX 2: Are the two triangles similar? If so, state how and write a similarity statement.



$\Delta JHK \sim \Delta FHG$

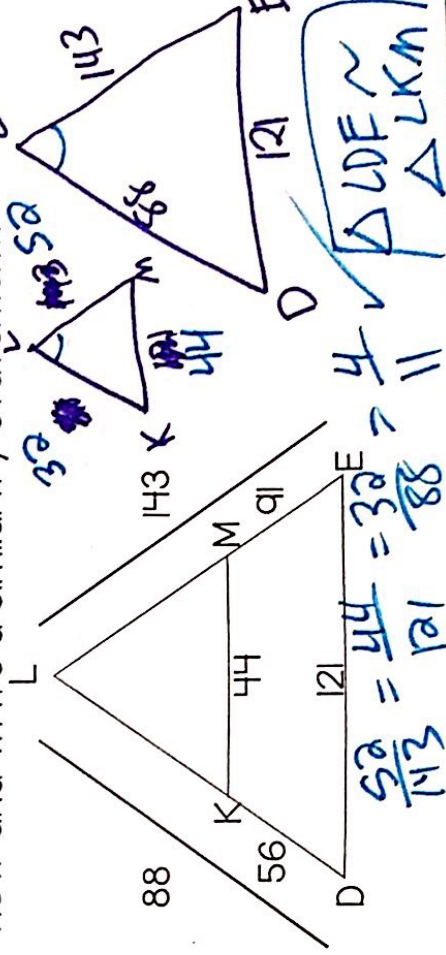
EX 4: Are the two triangles similar? If so, state how and write a similarity statement.



$\frac{6}{9} = \frac{10}{15} = \frac{2}{3}$

$\Delta LEJ \sim \Delta LKM$

EX 6: Are the two triangles similar? If so, state how and write a similarity statement.



$\frac{56}{143} = \frac{44}{121} = \frac{4}{11}$   
 $\frac{49}{88} = \frac{7}{8}$   
 $\Delta LDE \sim \Delta LKN$