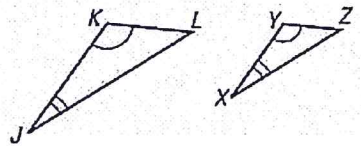
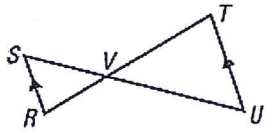
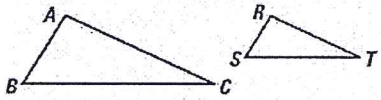
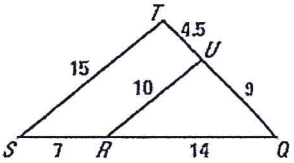
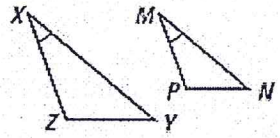
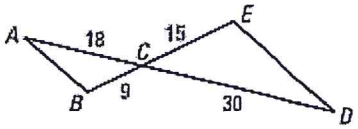
Name: Notes

Notes 4/24/2019

6.4-6.5: Triangle Similarity

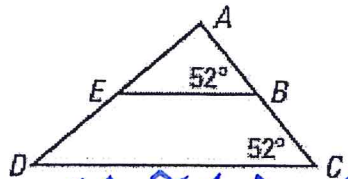
Similiar triangles have → Same angles / Same scale factor.

Similar Triangle Postulates:

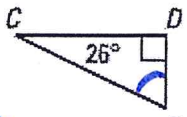
Postulate:	Example:	Practice with Hidden Tools:
AA: If two angles of one triangle are congruent to two angles of another triangle, then the two triangles are Similar.	 $\triangle JKL \sim \triangle XYZ$	**ΔSVR and ΔUVT** 
SSS: If the corresponding side lengths of two triangles are Proportionate then the triangles are similar	 If $\frac{AB}{RS} = \frac{BC}{ST} = \frac{CA}{TR}$, then $\triangle ABC \sim \triangle RST$.	**ΔRQU and ΔSQU** 
SAS: If an angle of one triangle is congruent to an angle of a second triangle and the lengths of the sides including these angles are Proportionate, then the triangles are similar.	 If $\angle X \cong \angle M$ and $\frac{ZX}{PM} = \frac{XY}{MN}$, then $\triangle XYZ \sim \triangle MNP$.	**Match order!!** 

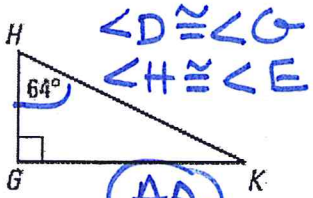
Ex. 1: Practice with AA: Determine if the two triangles are similar by AA.

a. ΔABE and ΔACD b. ΔDEC and ΔGHK c. ΔCDE and Δ BDA

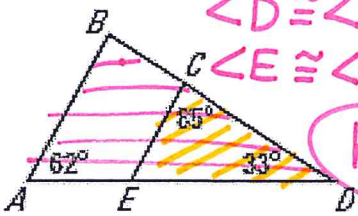


∠A ≅ ∠A
∠ABE ≅ ∠C
AA



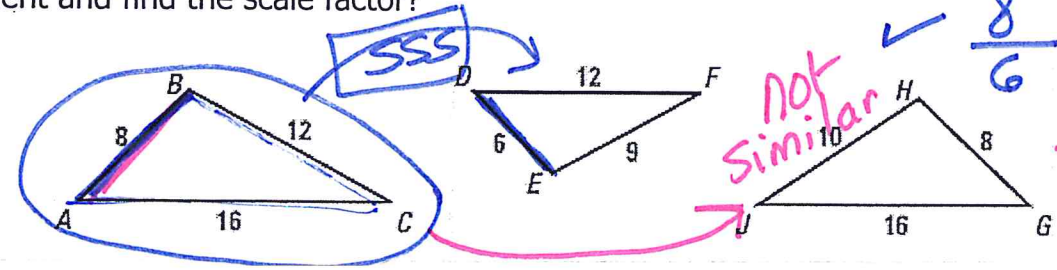


∠D ≅ ∠O
∠H ≅ ∠E
AA



∠D ≅ ∠D
∠E ≅ ∠A
AA

Ex. 2: Practice with SSS: Determine which triangle is similar to ΔABC by SS. Write a similarity statement and find the scale factor?



SSS

Not Similar

$\frac{8}{6} \stackrel{?}{=} \frac{12}{9} \stackrel{?}{=} \frac{16}{12}$

$\frac{8}{8} = \frac{16}{16} = \frac{12}{10}$

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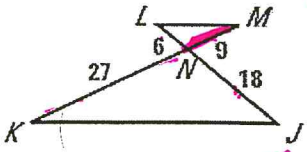
Ex. 3: Practice with SAS: Determine if the two triangles are similar by SAS.

a. ΔLNM and ΔJNK

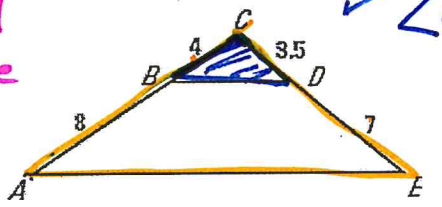


$\angle KNJ \cong \angle LNH$ Vertical angle

$\frac{9}{27} \stackrel{?}{=} \frac{6}{18}$

SAS

b. ΔCDB and ΔCEA

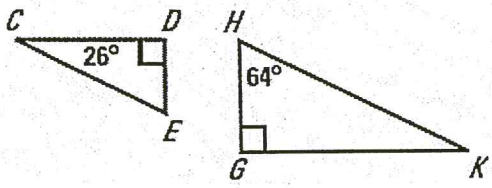


$\angle C \cong \angle C$ Shared angle

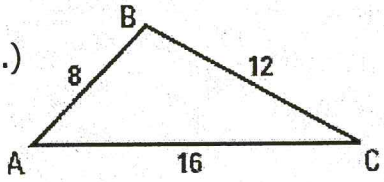
$\frac{4}{8} \stackrel{?}{=} \frac{3.5}{7}$

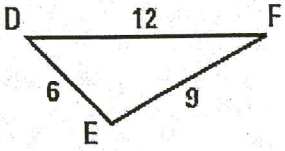
Ex. 4: Mixed Practice: Determine whether the triangles are similar. If they are, state what postulate or theorem you used and write a similarity statement.

1.)

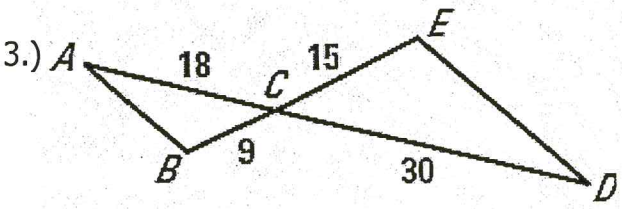


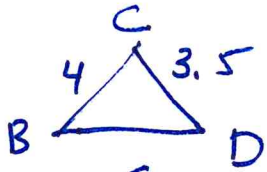
2.)



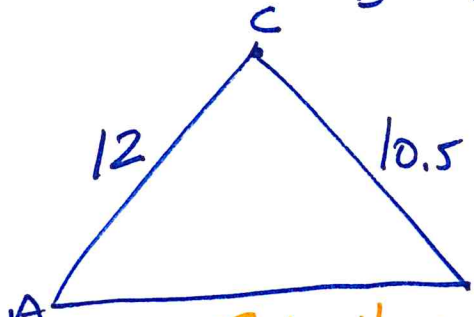


3.)





$\frac{4}{12} = \frac{3.5}{10.5}$



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

Similar SAS