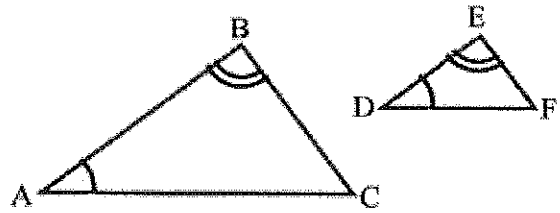
Cornell Notes Main Ideas/Questions	Name:_____ Date: _____ 7.3 Title of Notes: **Proving Similar Triangles**

Two triangles are similar if and only if the corresponding sides are in proportion and the corresponding angles are congruent.

Three Postulates that Prove Triangles are Similar

1. **AA (Angle Angle)** If two angles of one triangle are congruent to two angles of another triangle, the triangles are similar.



If: $\measuredangle A \cong \measuredangle D$

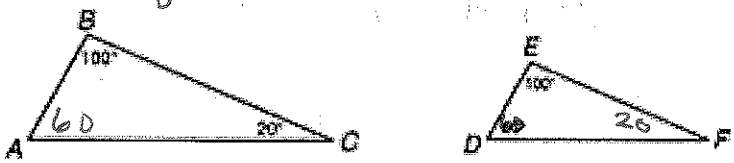
$\measuredangle B \cong \measuredangle E$

Then: $\Delta ABC \sim \Delta DEF$

similarity statement

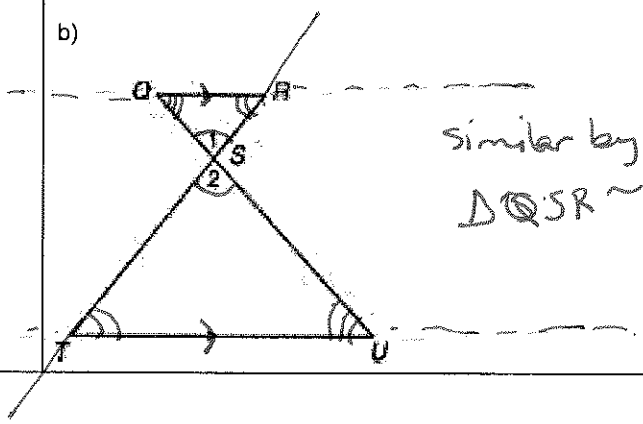
AA Practice: Give work that proves the triangles are similar by AA

a) similar by AA $\Delta ABC \sim \Delta DEF$



$m\angle B = m\angle E$

b)

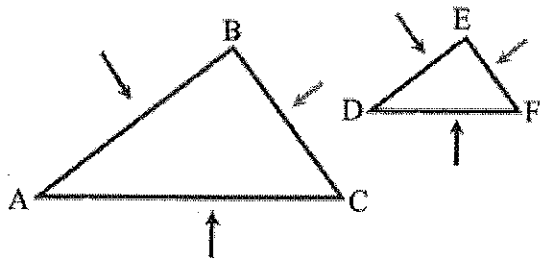


similar by AA

$\Delta QSR \sim \Delta UST$

Cornell Notes Main Ideas/Questions	Name:_____ Date: _____ Title of Notes: **Cont'd**

2. SSS (3 Sides are Similar) If the three sets of corresponding sides of two triangles are in proportion, the triangles are similar.



If: $\frac{AB}{DE} = \frac{AC}{DF} = \frac{BC}{EF}$

Then: $\Delta ABC \sim \Delta DEF$

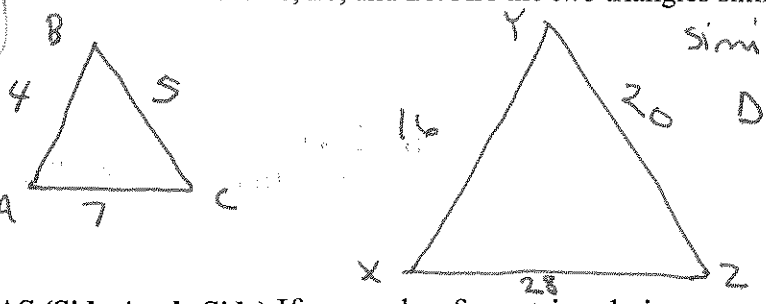
Ex.

The measures of the sides of ΔABC are 4, 5 and 7, and the measures of the sides of ΔXYZ are 16, 20, and 28. Are the two triangles similar?

$\frac{AB}{XY} = \frac{4}{16} = \frac{1}{4}$

$\frac{BC}{YZ} = \frac{5}{20} = \frac{1}{4}$

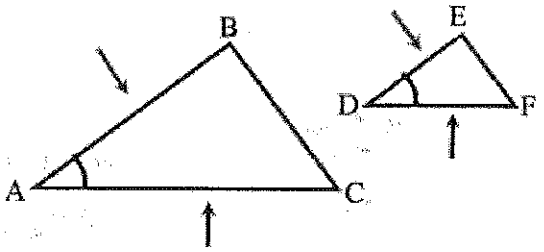
$\frac{AC}{XZ} = \frac{7}{28} = \frac{1}{4}$



similar by SSS

ΔABC~ΔXYZ

3. SAS (Side Angle Side) If an angle of one triangle is congruent to the corresponding angle of another triangle and the lengths of the sides including these angles are in proportion, the triangles are similar.



If: $\measuredangle A \cong \measuredangle D$

$\frac{AB}{DE} = \frac{AC}{DF}$

Then: $\Delta ABC \sim \Delta DEF$