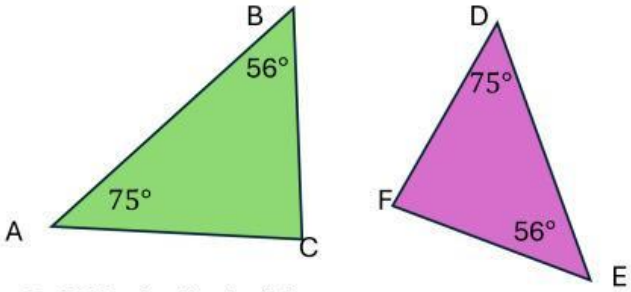
Guide Card 1

Definition: Two triangles are similar if their corresponding angles are congruent, and the lengths of corresponding sides are proportional.

Key Theorems for Proving Similarity

1. AA similarity Theorem

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

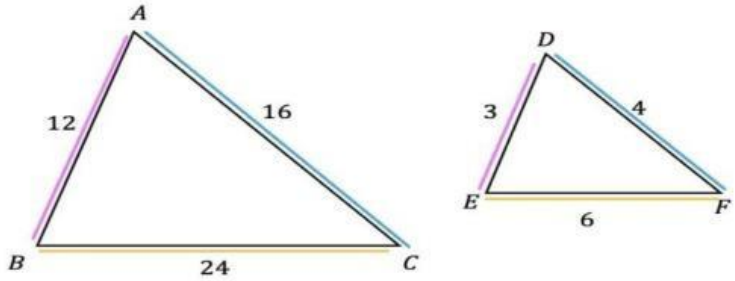


If: $\angle A \cong \angle D;\ \angle B \cong \angle E$

then: $\Delta ABC \cong \Delta DEF$

2. SSS similarity Theorem

- Two triangles are similar if the corresponding sides of the two triangles are in proportion.



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

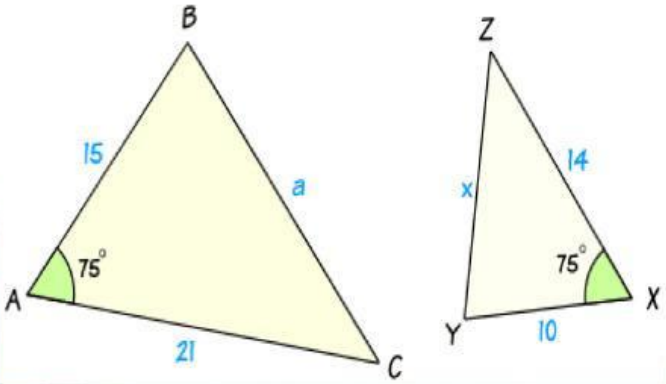
$\frac{12}{3} = \frac{16}{4} = \frac{24}{6}$

$4 = 4 = 4$

$\Delta ABC \sim \Delta DEF$ by ***SSS***

3. SAS similarity Theorem

- To triangles are similar if an angle of one triangle is congruent to an angle of another triangle and the corresponding sides including those angles are in proportion.



$\frac{AB}{YX} = \frac{AC}{ZX};\ \angle \boldsymbol{A} \cong \angle \boldsymbol{X}$

$\frac{15}{10} = \frac{21}{14}$

$210 = 210$

$\Delta ABC \sim \Delta XZY$ by SAS