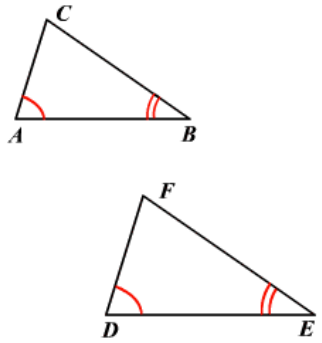
BACK PAGE

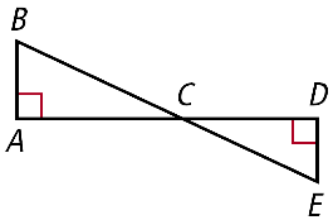
ANGLE-ANGLE (AA) SIMILARITY

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

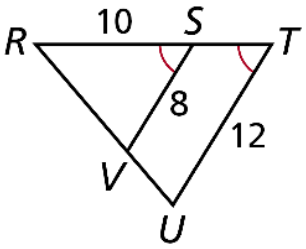


$\angle A \cong \angle D$ and $\angle B \cong \angle E$, thus $\Delta ABC \sim \Delta DEF$ by **AA Similarity**.

Ex. 1: Determine if the triangles are similar by Angle-Angle Similarity.

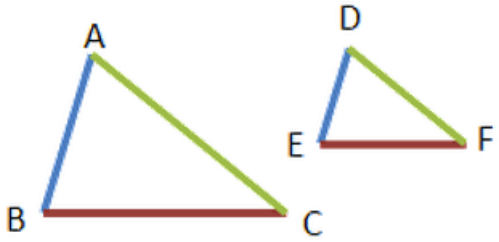


Ex. 2: Determine if the triangles are similar by Angle-Angle Similarity.



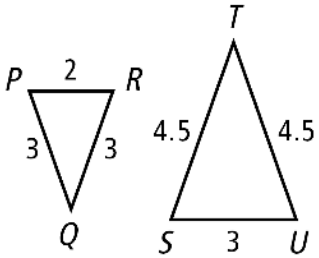
SIDE-SIDE-SIDE (SSS) SIMILARITY

If the three sides of one triangle are proportional to the three corresponding sides of another triangle, then the triangles are similar.



$\frac{AB}{DE} = \frac{BC}{EF} = \frac{CA}{FD}$, thus $\Delta ABC \sim \Delta DEF$ by **SSS Similarity**.

Ex. 3: Determine if the triangles are similar by Side-Side-Side Similarity.



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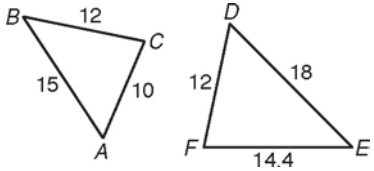
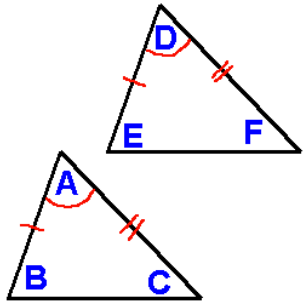


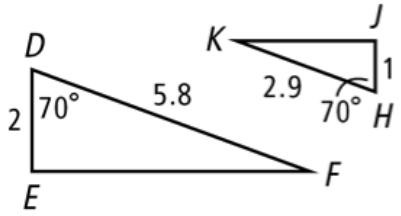
SIDE-ANGLE-SIDE (SAS) SIMILARITY

If two sides of one triangle are proportional to two sides of another triangle and their included angles are congruent, then the triangles are similar.

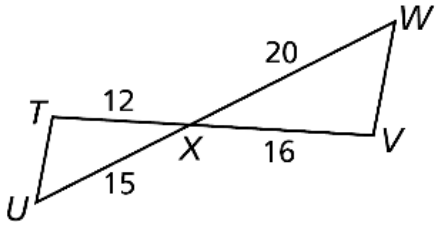


$\angle A \cong \angle D$, and $\frac{AB}{DE} = \frac{AC}{DF}$, thus $\Delta ABC \sim \Delta DEF$ by **SAS Similarity**.

Ex. 5: Determine if the triangles are similar by Side-Angle-Side Similarity.



Ex. 6: Determine if the triangles are similar by Side-Angle-Side Similarity.



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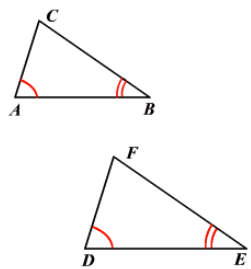
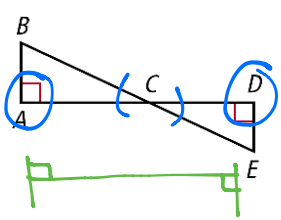


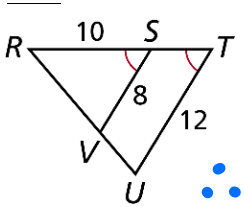
$\angle A \cong \angle D$ and $\angle B \cong \angle E$, thus $\Delta ABC \sim \Delta DEF$ by **AA Similarity**.

Ex. 1: Determine if the triangles are similar by Angle-Angle Similarity.



$\angle A \cong \angle D$ Given
$\angle ACB \cong \angle DCE$ Vertical
$m\angle B, \angle E$, since $BA \parallel DE$ by Alt Int $\angle$s
$\Delta ABC \sim \Delta DEC$ by AA

Ex. 2: Determine if the triangles are similar by Angle-Angle Similarity.

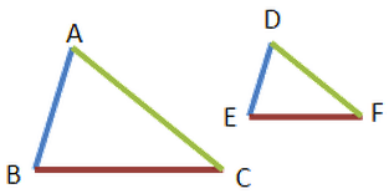


$\angle S \cong \angle T$ Given
$\angle R \cong \angle R$ Reflexive

$\therefore \Delta RSV \sim \Delta RTU$ by AA

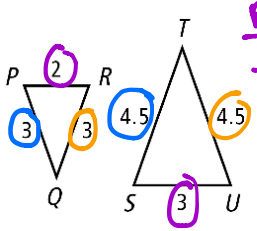
SIDE-SIDE-SIDE (SSS) SIMILARITY

If the three sides of one triangle are proportional to the three corresponding sides of another triangle, then the triangles are similar.



$\frac{AB}{DE} = \frac{BC}{EF} = \frac{CA}{FD}$, thus $\Delta ABC \sim \Delta DEF$ by **SSS Similarity**.

Ex. 3: Determine if the triangles are similar by Side-Side-Side Similarity.



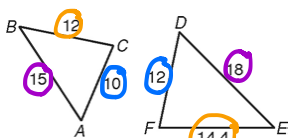
$\frac{PR}{SU} = \frac{2}{3} = .\overline{6}$

$\frac{RQ}{UT} = \frac{3}{4.5} = .\overline{6}$

$\frac{QP}{TS} = \frac{3}{4.5} = .\overline{6}$

$\therefore \Delta PRQ \sim \Delta SUT$ by SSS

Ex. 4: Determine if the triangles are similar by Side-Side-Side Similarity.



$\frac{10}{12} = \frac{5}{6} = .8\overline{3}$

$\frac{15}{18} = \frac{5}{6} = .8\overline{3}$

$\frac{12}{14.4} = .8\overline{3}$

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

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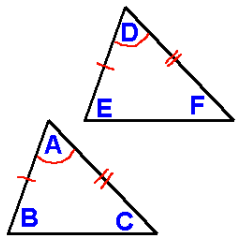

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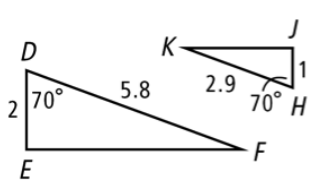


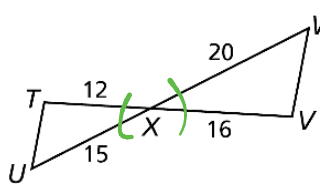
$\frac{2}{1} = 2$

$\frac{5.8}{2.9} = 2$

$\angle D \cong \angle H$

$\therefore \Delta DEF \sim \Delta HJK$ by SAS

Ex. 6: Determine if the triangles are similar by Side-Angle-Side Similarity.



$\angle TXU \cong \angle VXW$

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

$\frac{15}{20} = \frac{3}{4}$

$\therefore \Delta TXU \sim \Delta VXW$ by SAS