

Unit 5 Lesson 7

Proving Δ 's Similar

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Lesson 7 → Proving Triangles are Similar

Review of Similarity: AA~ SAS~ SSS~

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

AA~
 $\triangle XWV \sim \triangle XZY$

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

AA~
 $\triangle HJK \sim \triangle HFG$

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

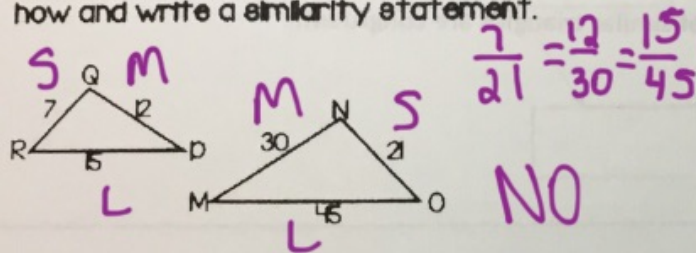
$\frac{4}{6} = \frac{6}{9} \checkmark$
 SAS~
 $\triangle MLN \sim \triangle PQR$

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

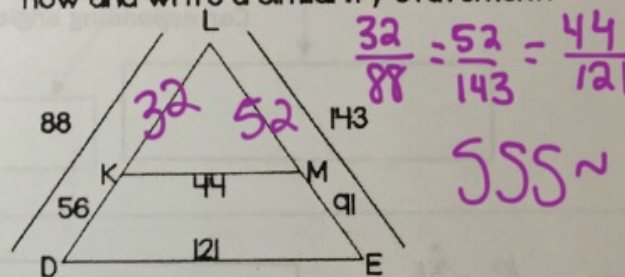
$\frac{6}{10} = \frac{3}{5}$
 SAS~
 $\triangle KLM \sim \triangle ELJ$

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



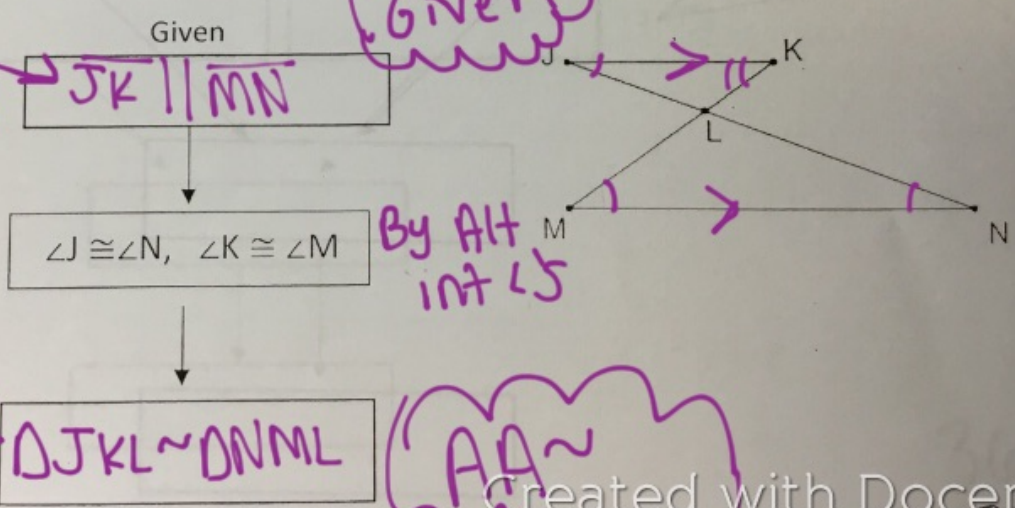
EX 6: Are the two triangles similar? If so, state how and write a similarity statement.



➤ Now that we know how to recognize that two triangles are similar, we can use this knowledge to prove two triangles are similar.

EX#1: Given: $\overline{JK} \parallel \overline{MN}$

Prove: $\triangle JKL \sim \triangle NML$



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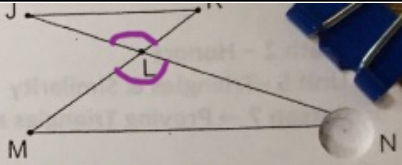
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EX#2: Given $\frac{JL}{LN} = \frac{KL}{LM}$ (SS)
Prove: $\triangle JKL \sim \triangle NML$

Given: $\frac{JL}{LN} = \frac{KL}{LM}$

Vertical \angle s are \cong : $\angle JLK \cong \angle MLN$ (Vert \angle 's \cong)

$\triangle JKL \sim \triangle NML$ By SAS \sim



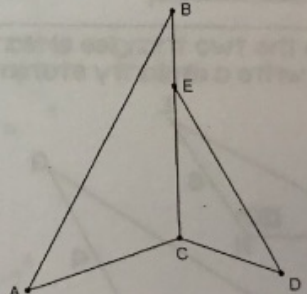
EX#3: Given $\frac{AB}{DE} = \frac{AC}{DC} = \frac{BC}{EC}$ (3 prop sides)
Prove: $\angle A \cong \angle D$

Given: $\frac{AB}{DE} = \frac{AC}{DC} = \frac{BC}{EC}$

$\triangle ABC \sim \triangle DEC$ By SSS \sim

Corresponding angles of similar triangles are congruent.

$\angle A \cong \angle D$ By Def of $\sim \triangle$



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Given $\frac{XF}{XS} = \frac{XE}{XR}$

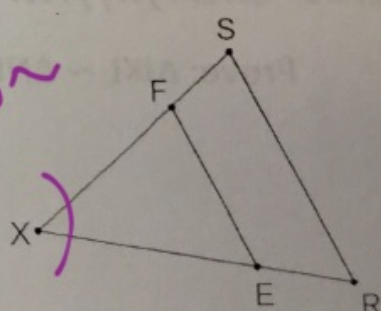
Prove: $\angle XFE \cong \angle S$

Given $\frac{XF}{XS} = \frac{XE}{XR}$

$\angle X \cong \angle X$ By Reflexive Prop of \cong

$\triangle XFE \sim \triangle XSR$ By SAS \sim

$\angle XFE \cong \angle S$ By Def of $\sim \triangle$



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