

Chapter 8- Lesson 2

Shortcuts to Similarity- Proofs

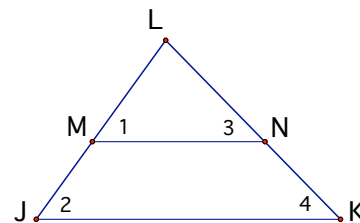
For each proof, copy the drawing, state what is given and what is to be proved, then write a two column proof¹.

1. Given: $\angle 1 \cong \angle 2$

Prove: $\triangle MLN \sim \triangle JLK$

2. Given: $\overline{MN} \parallel \overline{JK}$

Prove: $\triangle MLN \sim \triangle JLK$



For problems 1 and 2

3. Given: $\angle B \cong \angle D$

Prove: $\triangle ABE \sim \triangle CDE$

4. Given: $\angle 1 \cong \angle A$

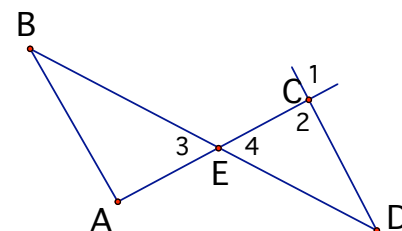
Prove: $\triangle ABE \sim \triangle CDE$

5. Given: $\overline{AB} \parallel \overline{CD}$

Prove: $\triangle ABE \sim \triangle CDE$

6. Given: $\triangle ABE \sim \triangle CDE$

Prove: $\overline{AB} \parallel \overline{CD}$



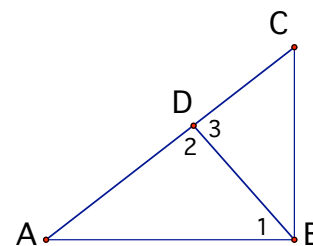
For problems 3 and 6

7. Given: $\overline{BD} \perp \overline{AC}$; $\angle 1 \cong \angle C$

Prove: $\frac{BC}{AB} = \frac{CD}{BD}$

8. Given: $\angle 1 \cong \angle C$

Prove: $\frac{AC}{AB} = \frac{AB}{AD}$



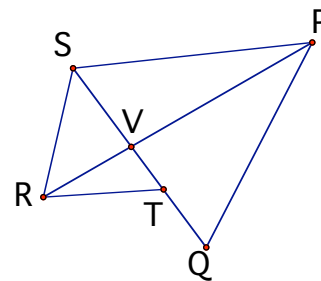
For problems 7 and 8

9. Given: $\overline{SP} \parallel \overline{RT}$; $\overline{SR} \parallel \overline{PQ}$

Prove: $RT \cdot PQ = PS \cdot RS$ (Hint: Write a proportionality statement.)

10. Given: $\overline{SP} \parallel \overline{RT}$; $\overline{SR} \parallel \overline{PQ}$

Prove: $\frac{SV}{QV} = \frac{TV}{SV}$



For problems 9 and 10

¹ Problems 1-8 are from Unified Mathematics, Book 2, pp.329-330