

Name [REDACTED] Solution Key

Math 404

15 MAR

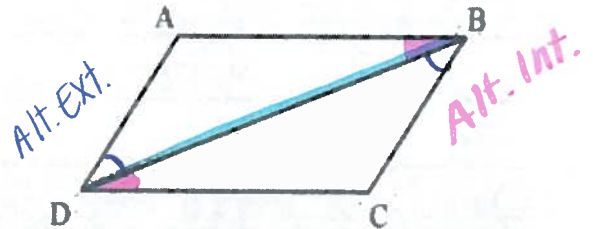
GEOMETRIC PROOFS

SSS ASA HL
SAS AAS

CONGRUENCY PROOFS

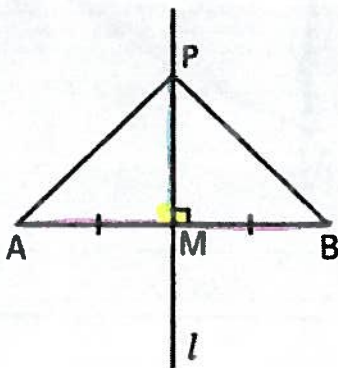
Prove $\triangle ABC \cong \triangle BCD$

Diagonal BD is drawn in parallelogram ABCD shown below.



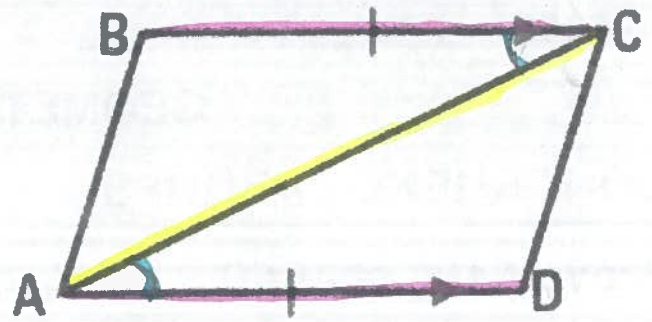
	Statements	Reasons
A	1. $\angle ADB \cong \angle CBD$	1. Alternate interior angles are congruent
S	2. $\overline{BD} \cong \overline{BD}$	2. Share a common side
A	3. $\angle ABD \cong \angle BDC$	3. Alternate interior angles are congruent
	4. $\triangle ABC \cong \triangle BCD$	4. ASA

Prove that $\triangle AMP \cong \triangle BMP$.



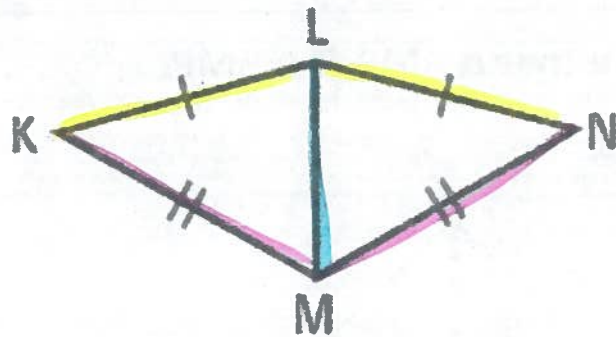
	Statements	Reasons
S	1. $\overline{MA} \cong \overline{MB}$	1. m is midpoint
A	2. $\angle PMA \cong \angle PMB$	2. l is a right bisector
S	3. $\overline{PM} \cong \overline{PM}$	3. Share a common side
	4. $\triangle AMP \cong \triangle BMP$	4. SAS

Prove $\triangle ABC \cong \triangle ACD$



	Statements	Reasons
S	1. $\overline{BC} \cong \overline{AD}$	1. Given
A	2. $\angle BCA \cong \angle DAC$	2. Alternate interior angles are congruent
S	3. $\overline{AC} \cong \overline{AC}$	3. Share a common side
	4. $\triangle ABC \cong \triangle ACD$	4. SAS

Prove $\triangle KLM \cong \triangle LMN$

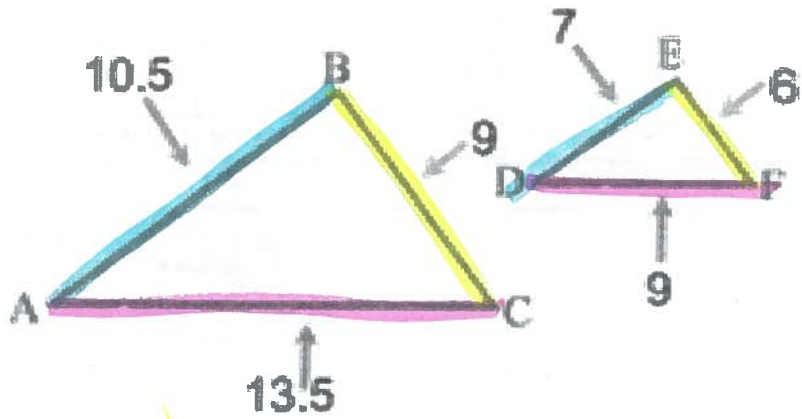


	Statements	Reasons
S	1. $\overline{KL} \cong \overline{NL}$	1. Given
S	2. $\overline{KM} \cong \overline{NM}$	2. Given
S	3. $\overline{LM} \cong \overline{LM}$	3. Share a common side
	4. $\triangle KLM \cong \triangle LMN$	4. SSS

SIMILARITY PROOFS

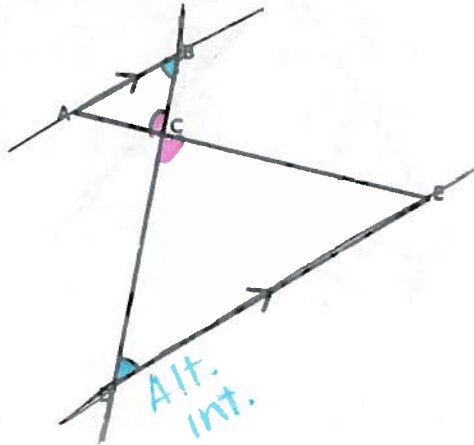
AA
SAS
SSS

Prove $\triangle ABC \cong \triangle DEF$



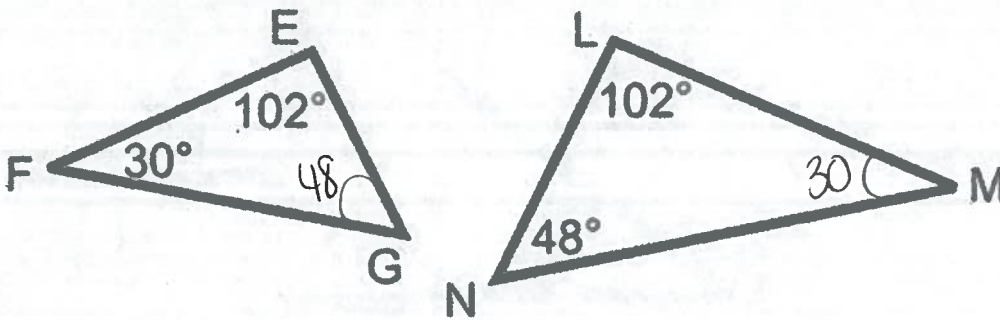
Statements	Reasons
1. $\overline{BA} - \overline{AC} = \overline{BC}$	1. $10.5 - 13.5 = 9 = 1.5$
2. $\overline{ED} - \overline{DF} = \overline{EF}$	2. $7 - 9 = 6$
3. $\triangle ABC \cong \triangle DEF$	3. SSS
4.	4.

Prove $\triangle ABC \cong \triangle CDE$



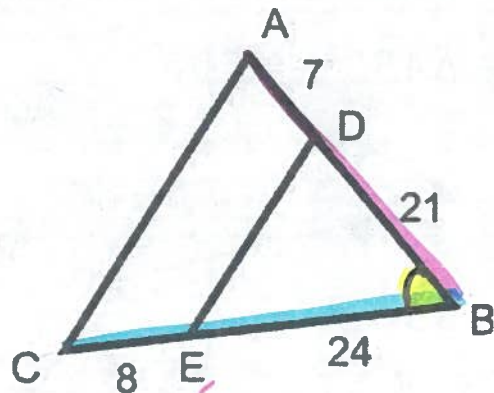
Statements	Reasons
1. $\angle ABC \cong \angle CDE$	1. Alternate interior angles are congruent
2. $\angle ACB \cong \angle DCE$	2. Vertically opposite angles are congruent
3. $\triangle ABC \cong \triangle CDE$	3. AA
4.	4.

Prove $\triangle EFG \cong \triangle LMN$



	Statements	Reasons
A	1. $\angle FEG \cong \angle NLM$	1. Given
A	2. $\angle FGE \cong \angle LNM$	2. sum of interior angles in $\triangle = 180$
	3. $\triangle EFG \cong \triangle LMN$	3. AA
	4.	4.

Prove $\triangle BDE \cong \triangle BAC$



	Statements	Reasons
	1. $\left(\begin{array}{l} \overline{BD} = \overline{BE} \\ \overline{AB} = \overline{BC} \end{array} \right)$	1. $\frac{21}{28} = \frac{24}{32} = 0.75$
	3. $\angle DBE \cong \angle ABC$	3. Share a common angle
	4. $\triangle BDE \cong \triangle BAC$	4. SAS