

Name: Kelly

Date: _____

UNIT 3

LESSON 7

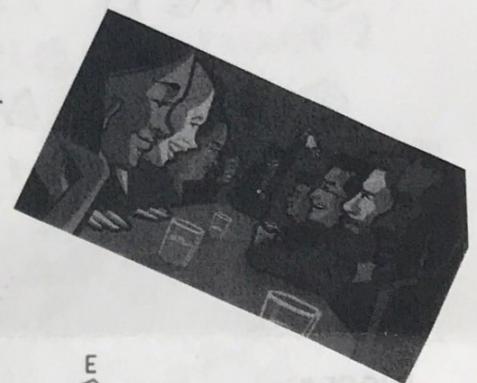
AIM: PROOF PRACTICE WITH ALL 5 SHORTCUTS!

Do Now: For the following, identify if the triangles are congruent by SSS, SAS, HL, ASA or AAS. NONE IS NOT AN OPTION!

<p>1.</p> <p>SSS</p>	<p>2.</p> <p>ASA</p>	<p>3.</p> <p>HL</p>	<p>4.</p> <p>SAS</p>
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PROOF "SPEED-DATING" INSTRUCTIONS:

1. Your goal is to become an expert on YOUR proof to the point where you can explain your example to another student. You will have ten minutes to do this.
2. The partner closer to the window will rotate around the room so you will have a new partner each turn.
3. You and your partner will exchange problems and check to see if the problems are answered correctly.



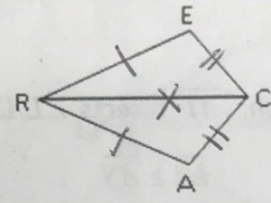
PROOF #1:

Given: $\overline{RA} \cong \overline{RE}$

$\overline{EC} \cong \overline{AC}$

Prove: $\triangle REC \cong \triangle RAC$

SSS



STATEMENT	REASON
① $\overline{RA} \cong \overline{RE}$ and $\overline{EC} \cong \overline{AC}$	① Given
② $\overline{RC} \cong \overline{RC}$	② Reflexive postulate
③ $\triangle REC \cong \triangle RAC$	③ SSS \cong SSS

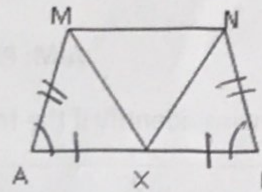
PROOF #2:

Given: X is the midpoint of \overline{AI}

$\angle A \cong \angle I$

$\overline{MA} \cong \overline{IN}$

SAS



Prove: $\triangle MAX \cong \triangle NIX$

STATEMENT	REASON
① X is the midpoint of \overline{AI} $\angle A \cong \angle I, \overline{MA} \cong \overline{IN}$	① Given
② $\overline{AX} \cong \overline{XI}$	② A midpoint creates 2 \cong segments
③ $\triangle MAX \cong \triangle NIX$	③ SAS \cong SAS

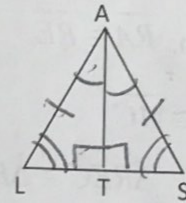
PROOF #3:

Given: \overline{AT} bisects $\angle LAS$

$\overline{LA} \cong \overline{AS}$

ASA

or AAS



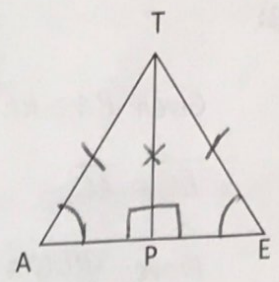
Prove: $\triangle ATL \cong \triangle ATS$

STATEMENT	REASON
① \overline{AT} bisects $\angle LAS$ $\overline{LA} \cong \overline{AS} \checkmark$	① Given
② $\angle LAT \cong \angle SAT \checkmark$	② A bisector creates 2 \cong angles
③ $\angle LTA \cong \angle STA \checkmark$	③ \perp lines form \cong right \angle 's
④ $\triangle ATL \cong \triangle ATS$	④ AAS \cong AAS

PROOF #4:

Given: $\overline{PT} \perp \overline{AE}$
 $\overline{AT} \cong \overline{TE}$
 Prove: $\triangle PAT \cong \triangle PET$

AAS

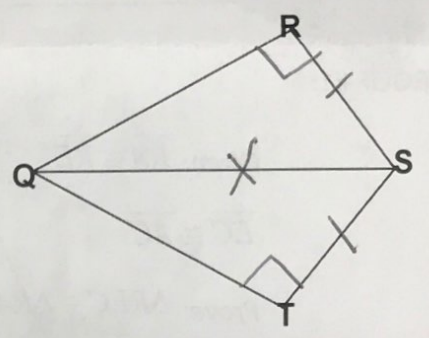


STATEMENT	REASON
① $\overline{PT} \perp \overline{AE}, \overline{AT} \cong \overline{TE}$ ✓	① Given
② $\triangle ATE$ is an isosceles \triangle	② isosceles \triangle 's have 2 \cong sides
③ $\angle A \cong \angle E$ ✓	③ isosceles \triangle 's have 2 \cong base \angle 's
④ $\angle APT \cong \angle EPT$ ✓	④ \perp lines form \cong right \angle 's
⑤ $\triangle PAT \cong \triangle PET$	⑤ AAS \cong AAS

PROOF #5:

Given: $\overline{QR} \perp \overline{RS}, \overline{ST} \perp \overline{TQ}$
 $\overline{RS} \cong \overline{ST}$
 Prove: $\triangle QRS \cong \triangle QTS$

HL



STATEMENT	REASON
① $\overline{QR} \perp \overline{RS}, \overline{ST} \perp \overline{TQ}, \overline{RS} \cong \overline{ST}$	① Given
② $\angle R$ and $\angle S$ are right \angle 's	② \perp lines form right \angle 's
③ $\triangle QRS$ & $\triangle QTS$ are right \triangle 's	③ right \triangle 's have 1 right \angle
④ $\overline{QS} \cong \overline{QS}$	④ reflexive postulate