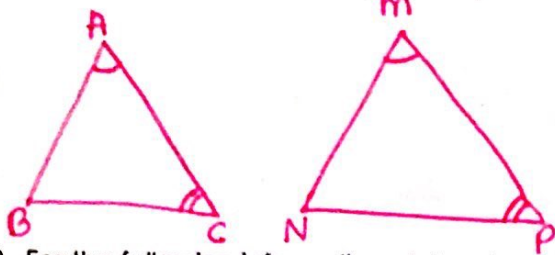


Day 5 – Proving Triangles Congruent (including CPCTC) Practice

1. Suppose $\triangle ABC \cong \triangle MNP$ and $\angle A \cong \angle M$ and $\angle C \cong \angle P$. What additional information would be needed to prove the triangles are congruent by ASA and AAS?

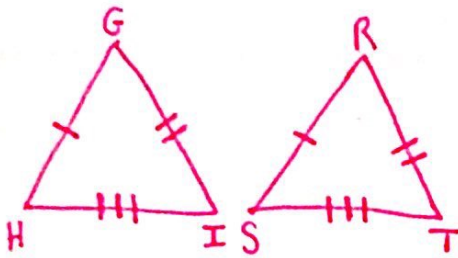


ASA: $\overline{AC} \cong \overline{MP}$

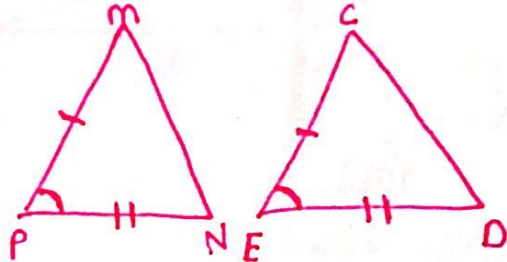
AAS: $\overline{BC} \cong \overline{NP}$
 $\overline{AB} \cong \overline{MN}$

2. For the following information, determine if the triangles are congruent. If they are, state which theorem proves them congruent and then write a congruence statement.

a. $\overline{GH} \cong \overline{RS}$, $\overline{GI} \cong \overline{RT}$, and $\overline{HI} \cong \overline{ST}$ **SSS**

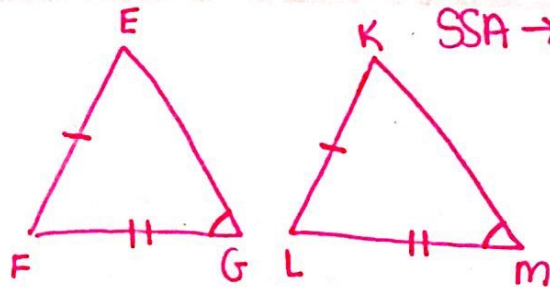
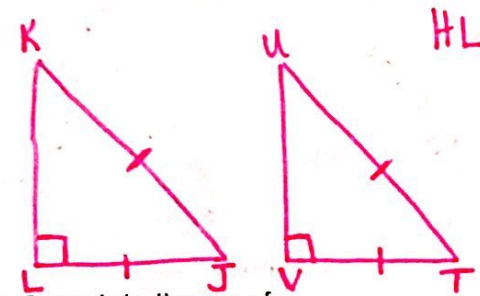


b. $\overline{MP} \cong \overline{CE}$, $\overline{NP} \cong \overline{DE}$, and $\angle P \cong \angle E$ **SAS**

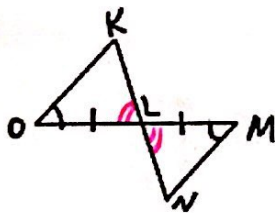


c. $\overline{JK} \cong \overline{TU}$, $\overline{JL} \cong \overline{TV}$, and $\angle L$ & $\angle V$ are right angles

d. $\overline{EF} \cong \overline{KL}$, $\overline{FG} \cong \overline{LM}$, and $\angle G \cong \angle M$

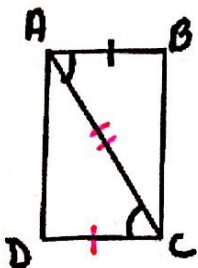


3. Complete the proof:



Statement	Reason
1. $\angle O \cong \angle M$	1. Given
2. $\overline{LO} \cong \overline{LM}$	2. Given
3. $\angle KLO \cong \angle NLM$	3. Vertical \angle 's are \cong
4. $\triangle KLO \cong \triangle NLM$	4. ASA
5. $\angle K \cong \angle N$	5. CPCTC

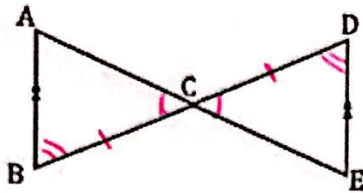
4. Complete the proof:



Statement	Reason
1. $\angle BAC \cong \angle DCA$	1. Given
2. $\overline{AB} \cong \overline{DC}$	2. Given
3. $\overline{AC} \cong \overline{AC}$	3. Reflexive Prop
4. $\triangle ABC \cong \triangle CDA$	4. SAS
5. $\angle B \cong \angle D$	5. CPCTC

5. Complete the proof:

Given: $\overline{AB} \parallel \overline{DE}$, \overline{AE} bisects \overline{BD}

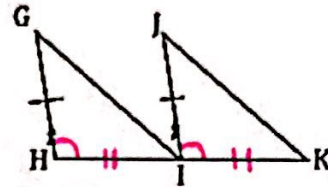


Prove: $\overline{AC} \cong \overline{EC}$

Statements	Reasons
1. $\overline{AB} \parallel \overline{DE}$	1. Given
2. \overline{AE} bisects \overline{BD}	2. Given
3. $\angle ABC \cong \angle EDC$	3. Alt.-Int. \angle 's are \cong
4. $\angle ACB \cong \angle DCE$	4. Vertical \angle 's are \cong
5. $\overline{BC} \cong \overline{CD}$	5. Def of Bisect
6. $\triangle ABC \cong \triangle EDC$	6. ASA
7. $\overline{AC} \cong \overline{EC}$	7. CPCTC

6. Complete the proof:

Given: $\overline{GH} \parallel \overline{JI}$, I is the midpoint of \overline{HK} and $\overline{GH} \cong \overline{JI}$

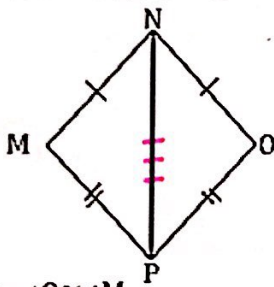


Prove: $\angle G \cong \angle J$

Statements	Reasons
1. $\overline{GH} \parallel \overline{JI}$	1. Given
2. I is the midpoint of \overline{HK}	2. Given
3. $\overline{GH} \cong \overline{JI}$	3. Given
4. $\overline{HI} \cong \overline{IK}$	4. Def of Midpoint
5. $\angle GHI \cong \angle JIK$	5. Corresponding
6. $\triangle GHI \cong \triangle JIK$	6. SAS
7. $\angle G \cong \angle J$	7. CPCTC

7. Create a two column proof for the following:

Given: $\overline{MN} \cong \overline{NO}$, $\overline{MP} \cong \overline{OP}$

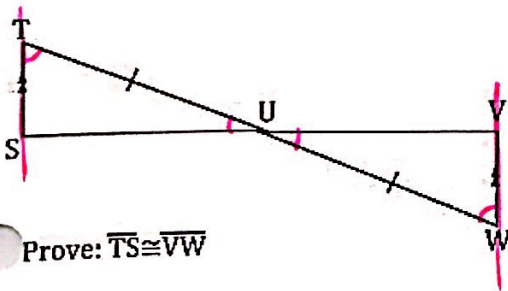


Prove: $\angle O \cong \angle M$

Statements	Reasons
① $\overline{MN} \cong \overline{NO}$	① Given
② $\overline{MP} \cong \overline{OP}$	② Given
③ $\overline{NP} \cong \overline{NP}$	③ Reflexive Prop
④ $\triangle NMP \cong \triangle NOP$	④ SSS
⑤ $\angle O \cong \angle M$	⑤ CPCTC

8. Create a two column proof for the following:

Given: $\overline{TS} \parallel \overline{VW}$, $\overline{TU} \cong \overline{WU}$



Prove: $\overline{TS} \cong \overline{VW}$

Statements	Reasons
① $\overline{TS} \parallel \overline{VW}$	① Given
② $\overline{TU} \cong \overline{WU}$	② Given
③ $\angle T \cong \angle W$	③ Alt.-Int \angle 's are \cong
④ $\angle TUS \cong \angle WUV$	④ Vertical \angle 's are \cong
⑤ $\triangle TUS \cong \triangle VWU$	⑤ ASA
⑥ $\overline{TS} \cong \overline{VW}$	⑥ CPCTC