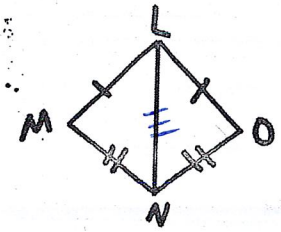
Name: Huff Per_____ Triangle Proof

2 Column Proofs:

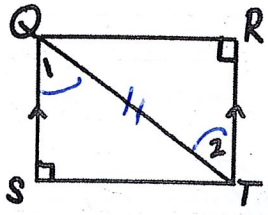
A deductive argument that contains statements and reasons organized in two columns.

Problem 1: Given: $\overline{LM} \cong \overline{LO}$, $\overline{MN} \cong \overline{ON}$



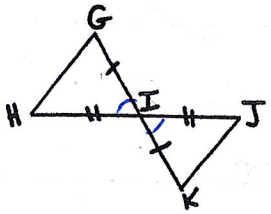
Statement	Reason
1. $\overline{LM} \cong \overline{LO}$	1. Given
2. $\overline{MN} \cong \overline{ON}$	2. Given
3. $\overline{LN} \cong \overline{LN}$	3. Reflexive Prop.
4. $\Delta LMN \cong \Delta LON$	4. SSS

Problem 2: Given: $\overline{QS} \parallel \overline{RT}$, $\angle R \cong \angle S$



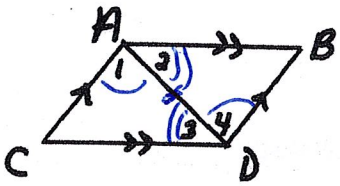
Statement	Reason
1. $\overline{QS} \parallel \overline{RT}$	1. Given
2. $\angle 1 \cong \angle 2$	2. Alternate Int. ∠s
3. $\angle R \cong \angle S$	3. Given
4. $\overline{QT} \cong \overline{QT}$	4. Reflexive. Prop
5. $\Delta QST \cong \Delta TRQ$	5. AAS

Problem 3: Given: $\overline{GI} \cong \overline{KI}$, $\overline{HI} \cong \overline{JI}$



Statement	Reason
1. $\overline{GI} \cong \overline{KI}$	1. Given
2. $\overline{HI} \cong \overline{JI}$	2. Given
3. $\angle GIH \cong \angle KIJ$	3. vertical ∠s
4. $\Delta GIH \cong \Delta KIJ$	4. SAS

Problem 4: Given: $\overline{AC} \parallel \overline{BD}, \overline{AB} \parallel \overline{CD}$



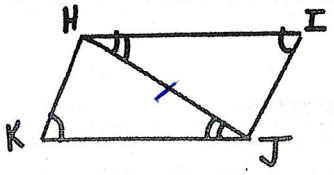
Statement	Reason
1. $\overline{AC} \parallel \overline{BD}, \overline{AB} \parallel \overline{CD}$	1. Given
2. $\angle 1 \cong \angle 4, \angle 2 \cong \angle 3$	2. Alternate Interior ∠s
3. $\overline{AD} \cong \overline{AD}$	3. Reflexive Property
4. $\Delta ADC \cong \Delta DAB$	4. ASA

Choices for problems #1 – 4 (some will be used more than once):

AAS
ASA
Alternate Interior Angles are ≅
Right Angle Congruence
Given
Reflexive Property
SAS
SSS
Vertical Angles are ≅

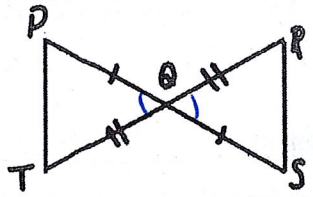
Name:_____Per_____ Triangle Proof

Problem 5: Given: $\angle I \cong \angle K$, $\angle IHJ \cong \angle KJH$



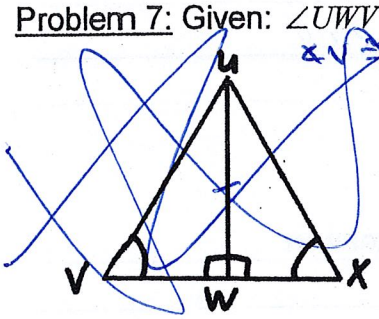
Statement	Reason
1. $\angle I \cong \angle K$	1. Given
2. $\angle IHJ \cong \angle KJH$	2. Given
3. $\overline{HJ} \cong \overline{HJ}$	3. Reflexive Prop
4. $\Delta HJK \cong \Delta JHI$	4. AAS

Problem 6: Given: $\overline{PQ} \cong \overline{QS}$, $\overline{QT} \cong \overline{QR}$



Statement	Reason
1. $\overline{PQ} \cong \overline{QS}$	1. Given
2. $\overline{QT} \cong \overline{QR}$	2. Given
3. $\angle PQT \cong \angle RQS$	3. vertical ∡s
4. $\Delta PQT \cong \Delta SQR$	4. SAS

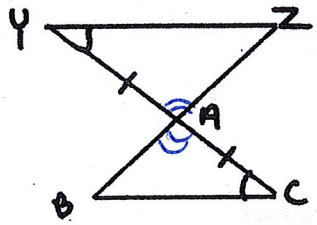
Problem 7: Given: $\angle UWV$ and $\angle UWX$ are right angles.



∡V ≅ ∡X

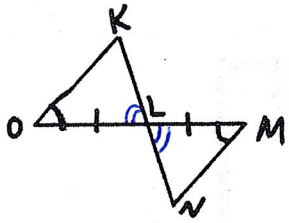
Statement	Reason
1. ∡UWV & ∡UWX are rt	1. Given
2. ΔUWV ≅ Δ UWX	2. Right Angle Congruence
3. $\angle V \cong \angle X$	3. Given
4. $\overline{UW} \cong \overline{UW}$	4. Reflexive Property
5. $\Delta UWV \cong \Delta UWX$	5. AAS

Problem 8: Given: $\angle Y \cong \angle C$, $\overline{YA} \cong \overline{CA}$



Statement	Reason
1. $\angle Y \cong \angle C$	1. Given
2. $\overline{YA} \cong \overline{CA}$	2. Given
3. ∡YAZ ≅ ∡CAB	3. Vertical Angles
4. $\Delta YZA \cong \Delta CBA$	4. ASA

Problem 9: Given: $\angle KOL \cong \angle NML, \overline{LO} \cong \overline{LM}$



Statement	Reason
1. ∡KOL ≅ ∡NML	1. Given
2. $\overline{LO} \cong \overline{LM}$	2. Given
3. ∡KLO ≅ ∡MLN	3. vertical ∡s
4. $\Delta KLO \cong \Delta NLM$	4. ASA