Name: _____ **Hour:** _____

Proof and Logic Unit Review

Determine whether the conjecture is true *or* false. *Give a counterexample for any false conjecture.*

1. **Given:** Point B is in the interior of $\angle ADC$.
   Conjecture: $\angle ADB \cong \angle BDC$

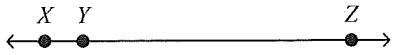
2. **Given:** $m^2 + 6 = 10$
   Conjecture: $m = 2$

3. **Given:** Two angles are supplementary.
   Conjecture: They are both acute angles.

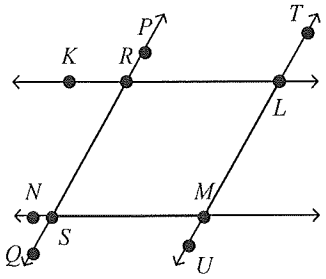
4. Make a conjecture given that *P is the midpoint of AB.*

5. Make a conjecture given that $DE \perp EF$

6. If $ZY = 7XY$, then $ZX = 8XY$.



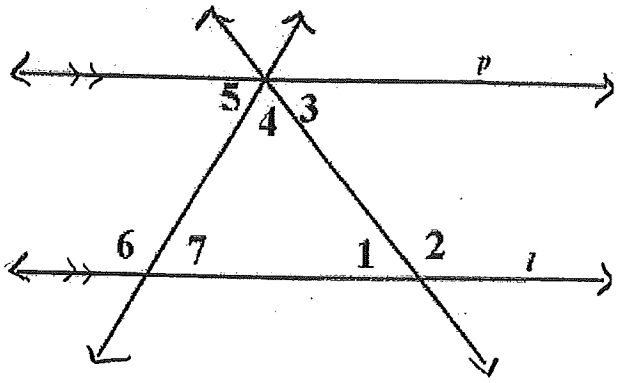
7. Line KL is parallel to line NM. Line PQ is parallel to line TU. If $\angle KRS \cong \angle SMU$, then $\angle PRK \cong \angle LMS$.



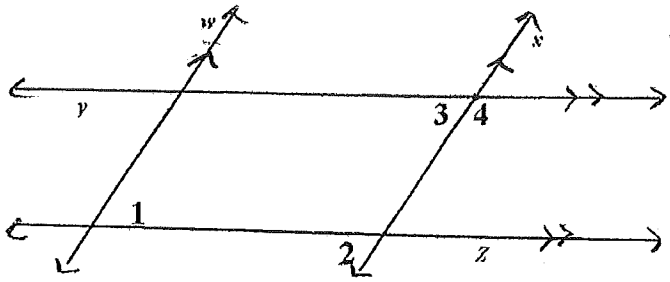
Name: _____ Date: _____ Hr: _____

Parallels Cut by Transversals Proofs HW

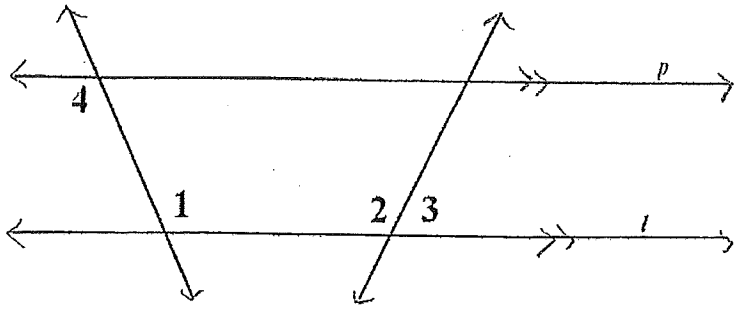
1. Given: <7≅<1 and l // p
Prove: <5≅<3



2. Given: w // x and y // z
Prove: <1 and <4 are supplementary



3. Given: $\angle 1 \cong \angle 2$ and $l \parallel p$
Prove: $\angle 3 + \angle 4 = 180°$



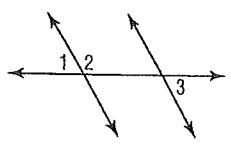
Determine whether the following statements are *always*, *sometimes*, or *never* true.

4. Two angles that are supplementary are complementary.

5. Complementary angles are congruent.

6. Write a two-column proof.
Given: $\angle 1$ and $\angle 2$ form a linear pair.
$\angle 2$ and $\angle 3$ are supplementary.
Prove: $\angle 1 \cong \angle 3$

You dont know they are // so you may NOT use Alt ext $\angle$s $\cong$.



NAME _____ DATE _____ PERIOD ____

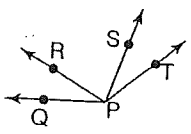
2-8 Study Guide and Intervention *(continued)*

9. Copy and complete the following proof.

Given: $\angle QPS \cong \angle TPR$

Prove: $\angle QPR \cong \angle TPS$

Proof:

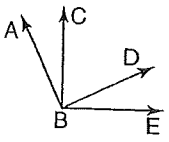


Statements	Reasons

Write a two-column proof.

Given: $\angle ABC$ and $\angle CBD$ are complementary. $\angle DBE$ and $\angle CBD$ form a right angle.

Prove: $\angle ABC \cong \angle DBE$



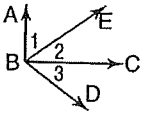
Statements	Reasons

Exercises

Complete each proof.

1. Given: $\overline{AB} \perp \overline{BC}$; $\angle 1$ and $\angle 3$ are complementary.

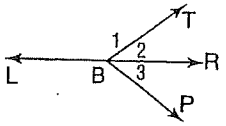
Prove: $\angle 2 \cong \angle 3$



Statements	Reasons

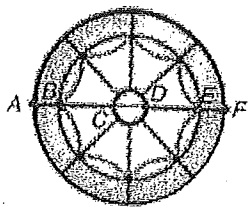
2. Given: $\angle 1$ and $\angle 2$ form a linear pair. $m\angle 1 + m\angle 3 = 180$

Prove: $\angle 2 \cong \angle 3$



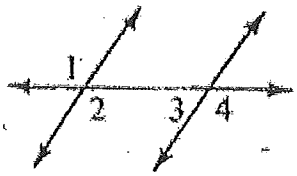
Statements	Reasons

4. LIGHTING In the light fixture, $\overline{AB} \cong \overline{EF}$ and $\overline{BC} \cong \overline{DE}$. Prove that $\overline{AC} \cong \overline{DF}$.



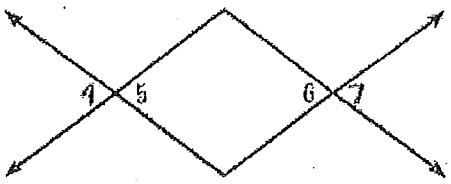
2. *Given:* $\angle 1 \cong \angle 4$

Prove: $\angle 3$ and $\angle 1$ are supplements.



3. Given: $\angle 5 \cong \angle 6$

Prove: $\angle 4 \cong \angle 7$



2.7 Practice

Name the definition, property, postulate or thereom illustrated.

1. $QA = QA$

2. If $AB \cong BC$ and $BC \cong CE$, then $AB \cong CE$.

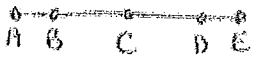
3. If Q is between P and R, then $PR = PQ + QR$.

4. If $AB + BC = EF + FG$ and $AB + BC = AC$, then $EF + FG = AC$.

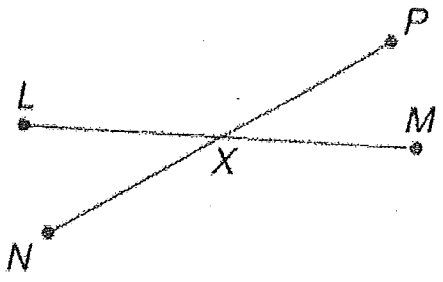
5. If $\overline{DE} \cong \overline{GH}$, then $\overline{GH} \cong \overline{DE}$.

Write a ' ' proof for each of the following.

b. **Given:** C is the midpoint of $\overline{BD}$ and $\overline{AE}$.
Prove: $AB = DE$

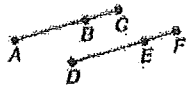


1. If $\overline{LM} \cong \overline{PN}$ and $\overline{XM} \cong \overline{XN}$, then $\overline{LX} \cong \overline{PX}$.



Write a proof.

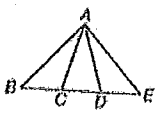
8. Given: $\overline{AB} \cong \overline{DE}$; $\overline{BC} \cong \overline{EF}$
Prove: $\overline{AC} \cong \overline{DF}$



9. Given: $\overline{SU} \cong \overline{LR}$
$\overline{TU} \cong \overline{LN}$
Prove: $\overline{ST} \cong \overline{NR}$

Write a proof.

10. Given: C is the midpoint of $\overline{BD}$.
D is the midpoint of $\overline{CE}$.
Prove: $\overline{BD} \cong \overline{CE}$



11. TRAVEL Refer to the figure. DeAnne knows that the distance from Grayson to Apex is the same as the distance from Redding to Pine Bluff. Prove that the distance from Grayson to Redding is equal to the distance from Apex to Pine Bluff.