NAME _____ DATE _____ PERIOD _____

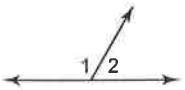
2-8 Skills Practice

Proving Angle Relationships

Find the measure of each numbered angle and name the theorems that justify your work.

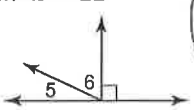
[use ex. 1 in the study guide]

1. $m\angle 2 = 57$



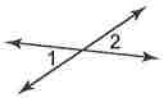
[use ex2 in the study guide]

2. $m\angle 5 = 22$



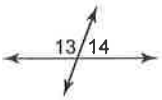
(look at the bottom line of exercise 3. in the study guide)

3. $m\angle 1 = 38$

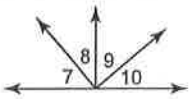


[exercise 1 in st. guide]

4. $m\angle 13 = 4x + 11$,
$m\angle 14 = 3x + 1$

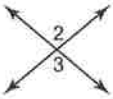


5. $\angle 9$ and $\angle 10$ are complementary.
$\angle 7 \cong \angle 9, m\angle 8 = 41$



6. $m\angle 2 = 4x - 26$,
$m\angle 3 = 3x + 4$

[ex 1. bottom of 2-8 practice]



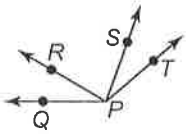
Lesson 2-8

7. Complete the following proof.

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

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

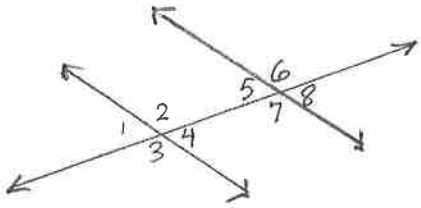
Proof:



Statements	Reasons
a. _____	a. _____
b. $m\angle QPS = m\angle TPR$	b. _____
c. $m\angle QPS = m\angle QPR + m\angle RPS$ $m\angle TPR = m\angle TPS + m\angle RPS$	c. _____
d. _____	d. Substitution
e. _____	e. _____
f. _____	f. _____

7; possible answers: Def. of ≅ angles, $m\angle QPR = m\angle TPS$, Given, Angle Add. Post., $\angle QPR \cong \angle TPS$, Def. of ≅ angles, $\angle QPS \cong \angle TPR$, Subtract. Prop., $m\angle QPR + m\angle RPS = m\angle TPS + m\angle RPS$.

8. Given: $\angle 2 \cong \angle 6$
Prove: $\angle 4 \cong \angle 8$

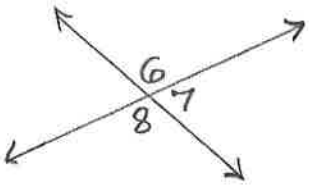


Proof: Statements	Reasons
1. $\angle 2 \cong \angle 6$	1.
2. $m\angle 2 + m\angle 4 = 180°$ $m\angle 6 + m\angle 8 = 180°$	2.
3. $m\angle 2 + m\angle 8 = 180$	3.
4. $m\angle 4 = 180 - m\angle 2$ $m\angle 8 = 180 - m\angle 2$	4.
5. $m\angle 4 = m\angle 8$	5.
6. $\angle 4 \cong \angle 8$	6.

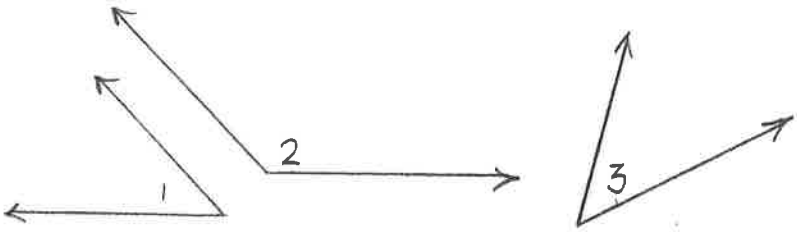
[Supl. Thm., Subtract. Prop. of Equal., Given, Def. of $\cong \angle$s, Substitution, Substitution]

9. Theorem 2.13 states if two $\cong \angle$s form a linear pair, then they are _____.
Make a sketch of this.

10. Find the measure of $\angle 8$
$m\angle 6 = 4x + 62$
$m\angle 7 = 5x + 28$



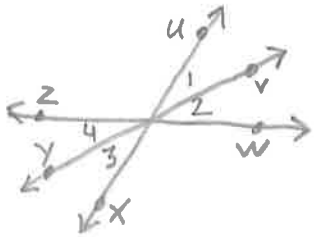
11. Given: $\angle 1$ and $\angle 2$ are suppl.
$\angle 2$ and $\angle 3$ are suppl.
Then: by what reason is $\angle 1 \cong \angle 3$? _____



123°	Vert. ∠s Thm.	94°	compl. thm.
49°	Right Angles	73°	41°
Suppl. Thm.	answer bank for all except #'s 7 & 8	Suppl. Thm.	Vert. ∠s Thm.
≅ suppl. Thm.	38°	102°	≅ Compl. Thm.
107°	94°	49°	68°

2.6 Challenge #2.

GIVEN: $\overrightarrow{TV}$ bisects $\angle UTW$
PROVE: $\overrightarrow{TY}$ bisects $\angle XTZ$



HINT: use vertical $\angle$s Thm.
Def. of $\angle$ bisector
& Transitive prop.

statements	reasons
1.	1.
2.	2.
3.	3.
4.	4.
5. $\overrightarrow{TY}$ bisects $\angle XTZ$.	5.