

Bellwork 09/20/2011

1. Copy and complete the proof.

Given: $MA=TH$
Prove: $MT=AH$



Statements	Reasons
1. $MA=TH$	1. <u>Given</u>
2. <u>$AT = AT$</u>	2. Reflexive Prop. of Eq.
3. $MA+AT=AT+TH$	3. <u>Addition Prop. of =</u>
4. $MA+AT=MT$; $AT+TH=AH$	4. <u>Segment Add. Post.</u>
5. <u>$MT = AH$</u>	5. Substitution Prop. of Eq.

Geometry
2.7 Prove Angle Pair Relationships
Standard(s): 3,7

Vocabulary:

THEOREMS	<i>For Your Notebook</i>
<p>THEOREM 2.4 Congruent Supplements Theorem</p> <p>If two angles are supplementary to the same angle (or to congruent angles), then they are congruent.</p> <p>If $\angle 1$ and $\angle 2$ are supplementary and $\angle 3$ and $\angle 2$ are supplementary, then $\angle 1 \cong \angle 3$.</p> <p><i>Proof:</i> Example 2, below; Ex. 36, p. 129</p>	
<p>THEOREM 2.5 Congruent Complements Theorem</p> <p>If two angles are complementary to the same angle (or to congruent angles), then they are congruent.</p> <p>If $\angle 4$ and $\angle 5$ are complementary and $\angle 6$ and $\angle 5$ are complementary, then $\angle 4 \cong \angle 6$.</p> <p><i>Proof:</i> Ex. 37, p. 129; Ex. 41, p. 130</p>	

POSTULATE	<i>For Your Notebook</i>
<p>POSTULATE 12 Linear Pair Postulate</p> <p>If two angles form a linear pair, then they are supplementary.</p> <p>$\angle 1$ and $\angle 2$ form a linear pair, so $\angle 1$ and $\angle 2$ are supplementary and $m\angle 1 + m\angle 2 = 180^\circ$.</p>	

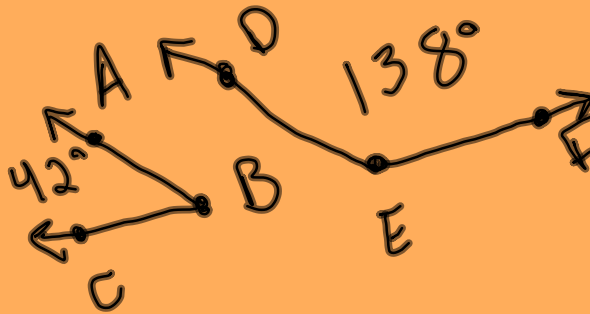
THEOREM	<i>For Your Notebook</i>
<p>THEOREM 2.3 Right Angles Congruence Theorem</p> <p>All right angles are congruent.</p>	

THEOREM	<i>For Your Notebook</i>
<p>THEOREM 2.6 Vertical Angles Congruence Theorem</p> <p>Vertical angles are congruent.</p> <p><i>Proof:</i> Example 3, below</p>	<p>$\angle 1 = \angle 3, \angle 2 = \angle 4$</p>

$\angle 1 \cong \angle 3$
 $\angle 2 \cong \angle 4$

Sketch Diagram Using Angle Relationships

Nonadjacent supplementary angles where one angle measures 42°



Use Properties of Equality

Write an equation that can be used to find x and an equation to find y .

$$7y = 5y + 28$$

$$-5y - 5y$$

$$2y = 28$$

$$y = 14$$

$$3x + 7 = 4x - 18$$

$$-3x + 18 - 3x + 18$$

$$x = 25$$

$$(3x+7)^\circ \quad 7y^\circ$$

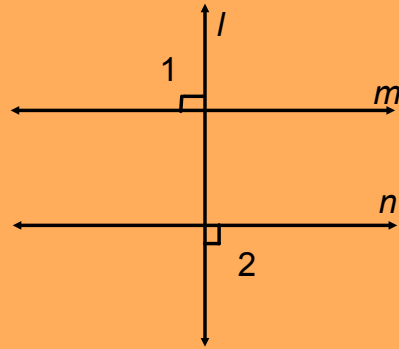
$$(5y+28)^\circ \quad (4x-18)^\circ$$

Use Right Angle Congruence

Write a two-column proof.

Given: $l \perp m, l \perp n$

Prove: $\angle 1 \cong \angle 2$



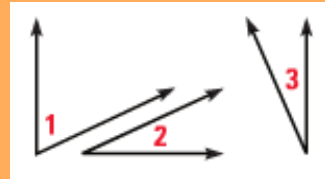
Statements	Reasons
1. $l \perp m$ $l \perp n$	1. Given
2. $\angle 1$ is a right \angle $\angle 2$ is a right \angle	2. Def. of \perp lines
3. $\angle 1 \cong \angle 2$	3. The right \angle congruence theorem

Use Complement Congruence

Write a two-column proof.

Given: $\angle 1$ and $\angle 2$ are complements
 $\angle 1$ and $\angle 3$ are complements

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



STATEMENTS	REASONS
1. $\angle 1$ and $\angle 2$ are complements. $\angle 1$ and $\angle 3$ are complements.	1. Given
2. $m\angle 1 + m\angle 2 = 90^\circ$ $m\angle 1 + m\angle 3 = 90^\circ$	2. Def. of complements
3. $m\angle 1 + m\angle 2 = m\angle 1 + m\angle 3$	3. Substitution Prop. of =
4. $m\angle 2 = m\angle 3$	4. Subtraction Prop. of =
5. $\angle 2 \cong \angle 3$	5. Def. of \cong 's.

Homework Assignment

Worksheet 2.7B

