Geometry Honors Unit 4: Reasoning 4.2 Day 2 Proving Supplementary, Complimentary, Vertical Angles

Mathematician: _____

Period:____

LEVEL: EMERGING

Directions: Use the diagram to answer the following questions.



5) Complete the two-column proof by filling in the empty spaces.

Given:
$$m \angle 1 = m \angle 4$$
, $m \angle EHF = m \angle GHF = 90^{\circ}$

Prove: $m \angle 2 = m \angle 3$



LEVEL: PROFICIENT

Statements	Reasons

6) Complete the two-column proof by filling in the reasons for each statement.

Given: $\angle RMP \cong \angle TMS$

Prove: $\angle RMS \cong \angle TMP$



Statements	Reasons	

	LEVEL: MASTERY
7) Find $m \angle PDT$ $M (3_{k,j_0}) P (5k^{-3})^{\circ} Q (2y-12)^{\circ} D (5y-108)^{\circ} R$ $T (10^{2} R^{3}) S (5y-108)^{\circ} R$	8) Solve for <i>x</i> . $(x^2+x-11)^{\circ}$ (5x - 6)°
$m \angle PDT = $	x =
 9) ∠1 and ∠2 are vertical angles. ∠3 is a supplement of ∠1. ∠4 is a complement of ∠1. What must be true about ∠4? 	 10) ∠1 is equal to the sum of ∠3 and ∠4. ∠1 and ∠2 are a linear pair ∠1 ≅ ∠2 What must be true about ∠4?
Select all that apply	Select all that apply
(A) $\angle 4$ is less than 90° (B) $\angle 4 = 90$ (C) $\angle 4$ is more than 90 (D) $\angle 4$ could form a linear pair with $\angle 3$ (E) $\angle 4$ is a compliment of $\angle 2$	(A) $\angle 4$ is less than 90° (B) $\angle 4 = 90^{\circ}$ (C) $\angle 4$ is more than 90° (D) $\angle 4$ is a compliment of $\angle 3$ (E) $\angle 4 \cong \angle 3$

Directions: Complete the proof by placing the reasons in the correct order. (Circle A B C D E in each step). Each option is only used **once**.

11) Given: Line k and line l intersect. Prove: $\angle 1 \cong \angle 3$



Statements			Reasons	
(1)	(1) Line k and line l intersect.		(1)	Given
(2)	Question a	A B C D E	(2)	Definition of a Linear Pair
(3)	Question b	A B C D E	(3)	Substitution
(4)	Question c	A B C D E	(4)	Subtraction Property of Equality
(5)	Question d	A B C D E	(5)	Definition of Congruence

A) $m \angle 2 + m \angle 3 = 180^{\circ}$ B) $m \angle 1 = m \angle 3$ C) $m \angle 1 + m \angle 2 = 180^{\circ}$

D) $\angle 1 \cong \angle 3$ E) $m \angle 1 + m \angle 2 = m \angle 2 + m \angle 3$