Quiz #6. Math 360, Axiomatic Geometry. Name: _____

Instructor: Ramin Naimi Fri 22 Nov 2002

Closed book. Closed Notes. May only use the Definitions-Axioms-Theorems handout, with no writings on it. 20 points per problem. Please write very legibly.

Please do not write in this area.	1.	2.	3.

1. Prove Theorem 4.10: If M_L and $M_{L'}$ are reflections in two parallel lines L and L' a distance d apart, then $M_{L'} \circ M_L$ is a translation by $2d$ along a line perpendicular to L, in the direction from L towards L'. Use the ruler axiom to give a proof without considering different cases.

2. Could a glide-reflection followed by a rotation be a glide-reflection? If not, prove it. If so, give an example and show that the composition really is a glide-reflection.

3. Suppose R is a rotation by an angle of $0 < \theta < 180$. Suppose T is a translation, and let $S = R \circ T$. Is S necessarily a rotation? Prove your answer.