

Math 302, Section B1; February 12, 2003  
Quiz 3 (with Solutions)

**Problem 1.**

Assume that you are working in the SMSG axiomatic system.

a) For two distinct points  $A, B$  write the definition of a line segment  $\overline{AB}$  with endpoints  $A, B$ .

A *line segment*  $\overline{AB}$  consists of all points  $C$  such that  $d(A, B) = d(A, C) + d(C, B)$ .

b) Write the definition of congruence for segments  $\overline{AB}$  and  $\overline{A'B'}$ .

Two segments  $\overline{AB}$  and  $\overline{A'B'}$  are called *congruent* if  $d(A, B) = d(A', B')$ .

c) Write the definition of congruence for triangles  $\triangle ABC$  and  $\triangle A'B'C'$ .

The triangles  $\triangle ABC$  and  $\triangle A'B'C'$  are said to be *congruent* if  $d(A, B) = d(A', B')$ ,  $d(A, C) = d(A', C')$ ,  $d(B, C) = d(B', C')$ ,  $m\angle ABC = m\angle A'B'C'$ ,  $m\angle ACB = m\angle A'C'B'$  and  $m\angle BAC = m\angle B'A'C'$ .