Quiz #3. Math 104, Symmetry, Shape, and Space.
Instructor: Ramin Naimi

Name: _____
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Closed book. Closed Notes. 20 points per problem. Please write very legibly.

1. (a) Write a rule for figuring out the dimensions of the "square unfolded table" for a 45 degree billiard problem.

    (b) Suppose a table has dimensions 48×72. Apply your rule above to this table to find the dimensions of the square unfolded table. Show your work.

2. (a) Given a line segment AB, give detailed instructions on how to construct, using compass and straightedge, the perpendicular bisector of AB.

Do **only one** of the following:

   (b) Explain why (prove) the above indeed gives the perpendicular bisector.

   (c) Given a line AB and a point C not on AB, give detailed instructions on how to construct, using compass and straightedge, a line passing through C that forms a 45 degree angle with AB.