Quiz #2. Math 104, Symmetry, Shape, and Space.
Instructor: Ramin Naimi

Name: _____
Fri 14 Sep 2001

Closed book. Closed Notes. No Calculators. 20 points per problem. Please write very legibly.

1. (a) What does it mean for a polygon to be *regular*? (Short answer.)
   (b) Write the formula for the sum of the vertex angles of an n-sided polygon. You don't need to prove or explain the formula; just write it! Does this formula work for polygons that are not regular? Just answer Yes or No, without explanation.
   (c) Draw a hexagon. Prove your formula from part (b)—not for all polygons—but just for your hexagon. Show all details (like in class and the book).

2. Suppose we have a 56×42 billiard table, and a ball leaves the lower left corner at an angle of 45 degrees.

   (a) Which corner will the ball end up at? Explain briefly.

   (b) How many hits will the ball make (including the start and the end)? (No need to explain.)

   (c) Draw a diagram of the ball's path, without drawing the gridlines. (Hint: Find the smallest table for which the ball's path will have the same pattern.)