Quiz #7. 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) Draw all combinatorially different trees that have three *edges*.
   (b) Use your answer from above to systematically find and draw all combinatorially different trees that have four edges. Explain your work.

2. (a) What type of maze is always solvable by the right-hand rule? More precisely, what condition on the graph formed by a maze's paths guarantees that the right-hand rule will solve the maze?

   What type of maze is always solvable by the method of shading dead-ends?
   (b) Which of the above methods—right-hand rule or shading dead-ends—work when you are inside a maze, and which work when you are outside? Just answer without explanation.
   (c) Is it true that if a maze cannot be solved by the right-hand rule, then it cannot be solved by the left-hand rule either? Why? Support your answer.