## MthSc 985: Topics in Discrete Mathematical Biology (Fall 2011) Quiz 1 (20 points)

NAME:
-------

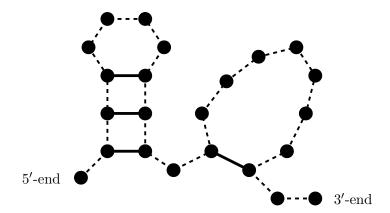
**Instructions:** Answer each of the following questions completely. If something is unclear, or if you have any questions, then please ask. Good luck!

1. (4 points) What are the possible base-pair bonds in a strand of RNA?

2. (6 points) Draw an RNA strand the exhibits a pseudoknot structure, as a 5-noncrossing (but *not* 4-noncrossing) arc diagram. Draw the diagram and an actual RNA strand that it represents.

Written by M. Macauley

3. (10 points) Draw the corresponding Motskin path, arc diagram, and point-bracket notation, for the RNA strand pictured below. Is it canonical?



Written by M. Macauley 2