

Math 2001: Homework W5

Due November 13, 2009

The following assignment will be graded with an emphasis on clarity of exposition. You should write in complete sentences, be as precise as possible, and be mathematically correct (both in content and format). Be sure to include a title, a short introduction to the topic, and to define all the relevant mathematical terms. The assignment should be **typed**.

Pick two of the three sets we considered in class (coins, arcs, or paths). Your theorem should somehow say that the sets have the same size. To prove the theorem, you will need to find a 1-1 correspondence between the two sets and show that it is a 1-1 correspondence. You should also be sure to include

- (a) The definitions of the sets you are considering.
- (b) A general description of how the 1-1 correspondence works (not just an example).
- (b) An illustrative, concrete (big) example of how your 1-1 correspondence works.