STA 4821 Exam (in class, open book) 25 Points 70 Minutes Fall 2011

I pledge my honor that I have neither given nor received aid on this exam.

NAME _____ Z NUMBER _____

Show all work (attach work pages). Write on one side of page only. Write answers in space provided. Staple in upper left-hand corner.

Consider three identical-looking coins. Two of the coins are ordinary fair coins (H and T are equally likely to occur on any toss), but the third coin is biased (H occurs with probability 0.8). Fran and Ron each chooses a coin at random, and the remaining coin is discarded. Fran and Ron toss their coins. If the coins show different faces, then the person whose coin shows H wins the match; otherwise, the match is a tie. Fran and Ron play a series of matches.

1. Find the probability that Fran wins the first match.

1 _____

2. Find the probability that Fran wins the second match.

2 _____

3 _____

3. Find the probability that Fran wins the first two matches.

4 _____

5 _____

4. Find the probability that Fran is using the biased coin if she wins the first two matches.

5. Suppose that Fran and Ron play until either Fran wins a match or there is a tie. Find the probability that Fran wins a match.