**MA 222B EXAM #1 Feb. 18, 2016**

Name (print) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I pledge my honor that I have abided by the Stevens Honor System.

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**Closed book, closed notes, no electronic access. Answer all questions.**

1. When Mary goes fishing for a day, the probability that she catches a fish is 0.4 (she never catches more than one fish on a day because when she does catch a fish she goes home for the day).

What is the probability that Mary catches at least 2 fish in the next 3 days of fishing?

2. A fair coin is tossed until a “Head” comes up. What is the probability that it takes more than two tries to get that first “Head”?

3. If 12% of the population are left-handed, what is the probability that in a group of four randomly chosen people, at least one of them will be left-handed?

4. If two dice are rolled, what is the probability that the sum of the two dice will be equal to six?

5. In a group of 12 dogs in a kennel, four are brown and eight are black (one of the eight black dogs is named Rover). If 5 dogs are selected at random to be trained as guide dogs, what is the probability that the group of 5 dogs has three black dogs and two brown dogs with Rover being one of the black dogs?

6. When Coin #1 is flipped, it comes up heads with probability ¼, and when Coin #2 is flipped, it comes up heads with probability ¾. We choose one of these two coins at random and flip it twice. If both flips come out Heads, what is the probability that Coin #2 was the coin that was flipped?

7. Consider a city where all the homeowners have both liability insurance coverage and property damage coverage. This year 4% of the homeowners will file a liability claim and 10% of the homeowners will file a property claim. 1% of the homeowners will file only a liability claim (and not a property claim).

Calculate the probability that a randomly selected homeowner will not file a claim of either type.