Week 1 – BIA 652

1. Flipping a coin 3 times, the probability of getting exactly 2 tails is _____?

2. In a sequence of 10 flips of a coin, if the coin is fair, what is the probability of exactly 3 heads in 10 flips?

3. In a 5-card hand from a deck of 52, there are (52*51*50*49*48)/(5*4*3*2*1) different possible hands. Order doesn't matter, so there are 2,598,960 possible hands. What is the probability of 4 of a kind (4 of the same card with the same number plus one other)?

4. Of the cars on a used car lot, 70% have air conditioning (AC) and 40% have a CD player (CD). 20% of the cars have both.

What is the probability that a car has a CD player, given that it has AC ?

What is the probability that a car has AC, given that does NOT have a CD player ?

5. In a certain county

- 60% of registered voters are Republicans
- 30% are Democrats
- 10% are Independents.

When those voters were asked about increasing military spending ·

- 40% of Republicans opposed it
- 65% of the Democrats opposed it
- 55% of the Independents opposed it.

What is the probability that a randomly selected voter in this county opposes increased military spending?

6. Suppose that an office receives telephone calls randomly. The number of calls in a 5-min. interval follows a Poisson distribution with parameter $\lambda = 2.5$.

What is the probability of no calls in a 5-min interval?

What is the probability of two or more than two calls in a 5-min interval?

What is the probability of no calls in a 10-min interval?