1. 3.7 exercise 7
   1. Venn
   2. No, the two are not disjoint because the probability of neither of them occurring is 0.
   3. 80%
   4. P(A) and P(B) are not independent because the chance of one happening affects the chance of the other happening.
   5. 0.4 / 0.6 = 2/3 = 0.6666 = 67%
2. 3.7 exercise 6
   1. (1/4)^10 = 0.00000095 = 0.0001%
   2. (1/2)^10 = 0.00097 = 0.1%
3. Three fair six sided dice
   1. (5/6)^3 = 0.5787 = 58%
   2. 1 - (5/6)^3 = 0.4213 = 42%
   3. (1/8) + (1/8) + (1/8) + (1/8) = 4/8 = 0.5 = 50%
4. Murderers in America
   1. 14,000 / 160,000,000 = 14 / 160,000 = 0.0000875 = 0.00875% = 0.01%
   2. 14,000 / 16,000 = 14 / 16 = 0.875 = 87.5% = 88%
   3. It is not fair to assume that most American males are murderers, but it is fair to assume that most Americans that are murderers are males.
5. Seahawks Probabilities
   1. TD(0.6 \* 0.95) + NG(0.39 \* 0.8) = 0.882 = 88%
   2. TD(0.65 \* 0.95) + NG(0.31 \* 0.8) = 0.8655 = 87%
   3. Statistically, the Seahawks should have run the ball. However, Russell Wilson has a very low interception percentage and what happened was an anomaly for him. He’s an MVP candidate coming into this weekend’s battle against the Chiefs. I think that if the Seahawks could have another shot at beating the Patriots back in the 2014 season, regardless of the statistical evidence, they would have done the same thing.