The Data set that I used for this assignment is League of Legends Diamond Ranked Games (10 min) (<https://www.kaggle.com/datasets/bobbyscience/league-of-legends-diamond-ranked-games-10-min?resource=download>) In this data set it gives information about the first 10 minutes of diamond ranked games. This data set gives information on many things such as winning team, total gold, dragons killed, towers taken, and many other things.

Conditional Probability:

What is the Probability that in the first ten minutes of the match that a dragon is taken given a tower is taken by blue side?

Where a is the probability that a dragon was taken and B being the probability that a tower was taken. The probability that a dragon was taken by blue side is 36.19% and the probability that a tower was taken by blue side is 5.14%. For this you would need to find the Probability of both occurring which would be 1.86%

Meaning that there is a 36.19% chance of blue taken the dragon given that they have taken a tower.

Probability Distribution:

Given that there are 20 games what are the chances that red side won 5 of the games where blue side won 12 and red side won 8?

There are 15,504 combinations of this happening. Meaning there is a .3612% chance of this happening.

Binomial Distribution:

What is the probability of winning 5 out of 10 games on blue side given that the probability of blue side winning is 49.89%?

meaning that there is a 24.6% chance that blue side wins 5 out of ten games

Geometric Distribution:

What is the probability of taking a tower in the first ten minutes of your sixth game given that the probability of taking a tower in under ten minutes is 5.14%?

Negative Binomial Distribution:

Given that the probability of Blue side winning is 49.89% what is the probability that blue side wins their third game on the fifth overall game?

Meaning that there is an 18.7% chance of blue side winning their third game on the fifth overall game

Hypergeometric Distribution:

The support on the blue side places 20 wards. 5 of these wards were placed in the enemy jungle. What is the probability that 4 of those 5 wards will be destroyed if 4 of your wards are randomly destroyed?

Meaning that if 4 wards got randomly destroyed then there is a 1.54% chance that they are the wards in the enemy jungle.