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Formula Library Documentation

This program is a collection of methods that we have used in probability and applied statistics class. This is a continuation of the previous program that includes all of the formulas used in class. In this half of the course we covered a few topics that are applicable to the programming library. The methods in this program include Poisson distribution and uniform distribution with their expected values and standard deviation. Aside from those two, there is the Chebyshev theorem as a method as well. With this half of the class, I found the program to be more useful to use in practice than the first half of the class. It really helped me cut down on time of writing things out.

As you can see, the Poisson distribution methods output the expected values. The poisson distribution method takes two parameters, X and Lambda. For poisson, the standard deviation and the expected values both are equal to Lambda.

```
The poisson distribution is 0.09022352215774l8
expected result .0902........
The expected value of the poisson distribution is 1.0
expected result 1
The variance of the poisson distribution is 1.0
expected result 1
```

For the uniform distribution, the method takes the two parameters A and B, and outputs the uniform distribution for that. For the purpose of this test, the outputs are all matching the expected values for each problem.

```
The uniform distribution is 0.04
expected result .04
The expected value of the uniform distribution is 20.0
expected result 20
The variance of the uniform distribution is 133.33333333333334
expected result 133.333
```

Lastly, we have Chebyshev's theorem. This just takes the k value and outputs the 1-(1/k^2).

```
The Chebyshev value is 0.7699681981033878
expected result .77
```

This shows the percentage values that fall within a number of standard deviations.