CSCI 1011 Fall 2017 Assignment 4

This is not a group project. Do your own work. Giving any part of a solution to another student is just as dishonest as getting any part of a solution from anyone else. Copying any part of a solution from the Internet is similarly dishonest.

This assignment is worth 100 points, or 12.5% of your final grade. You are responsible for ensuring that your solution submission on Blackboard is complete. The on-time due date is December 8. The absolute due date is December 10.

The goal of this assignment is for students to gain experience using a third-party library and its associated Javadoc. The library to use is Apache Commons Math, available online at the following URL: http://commons.apache.org/proper/commons-math

Write a Java program named ThirdPartyLibrary.java. Label all output; don't make me guess which number meets which requirement. Requirements:

1. Accept two run arguments. Parse these two arguments into two variables of type double.
2. Create an instance of the BetaDistribution class, using the two variables created in requirement #1 above as the alpha and beta values.
3. Using your BetaDistribution instance, compute and print the numerical mean.
4. Using your BetaDistribution instance, compute and print the numerical variance.
5. Using your BetaDistribution instance, compute and print the log density. The point at which to evaluate the PDF is 0.1.
6. Using your BetaDistribution instance, print ten samples. The sample() function call may appear only once in your file.
7. Create an instance of the DescriptiveStatistics class. Use the ten samples from requirement #6 above as data for the DescriptiveStatistics instance.
8. Using the DescriptiveStatistics class, compute and print the geometric mean.
9. Using the DescriptiveStatistics class, compute and print the kurtosis.
10. Using the DescriptiveStatistics class, compute and print the skewness.