Problem 0

Please follow the steps on slides to set up your anaconda. You should be able to run the class Jupyter notebook successfully.

Try to resolve any issues you may have. I encourage discussion and help each other on the installation. Google is also a good resource.

It is your job to set up the environment on your computer. I am not familiar with your computer so I won't do your homework for you.

You will take full responsibility of your dev environment during exams, i.e., if your Jupyter doesn't work during exams, you know how to quickly fix it or you lose time.

Problem 1

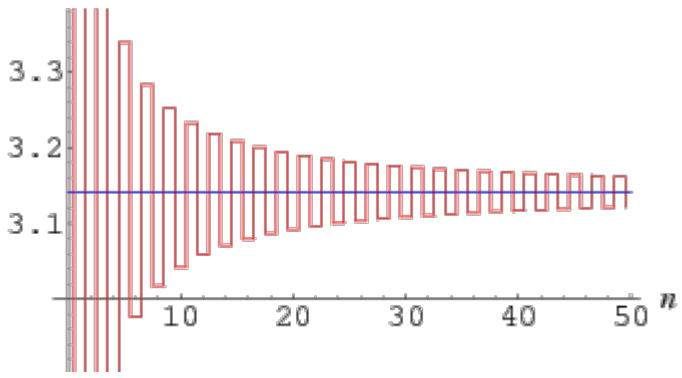
Write R code to generate a vector within range from 0 to 100 where

- every number is either divisible by 3 or 5
- no duplicates in your result
- sorted
- challenge: return the vector that excludes the numbers divisible by 15

Problem 2

Compute pi by Gregory series.

$$4\sum_{k=1}^{n}\frac{(-1)^{k+1}}{2k-1}$$



- Let n = 100
- Use loop
- Challenge: write one line R by using vectorization

Problem 3

Stock Volume Analysis

- Download IBM historical daily data of the entire 2018 from Yahoo.
- Find the "Download Data" link to download the csv file to your local disk. https://finance.yahoo.com/quote/IBM/history?period1=1514782800&period2=1546232400&interval=1d&filter=history&frequency=1d
- Load csv file into a data frame
- Return all rows where the Close is greater than Open (bull market)
- Return all rows where the Close is less than Open (bear market)
- For the above two subsets, compute the average Volume for each.
- In which market condition is the average Volume higher?