Nicole, Ali, Sidd, Ryan

Question 5

Recommendation for how many component stocks to include in the fund and to pick weights.

Method 1

Nicole, Ali, Sidd, Ryan
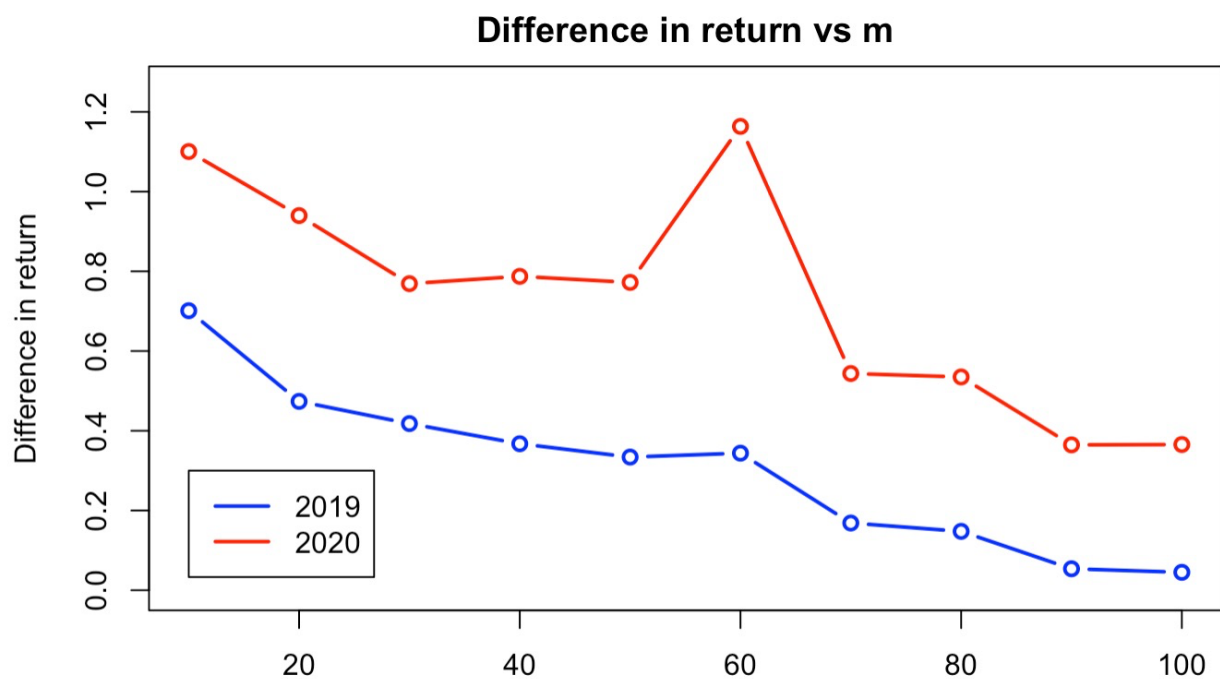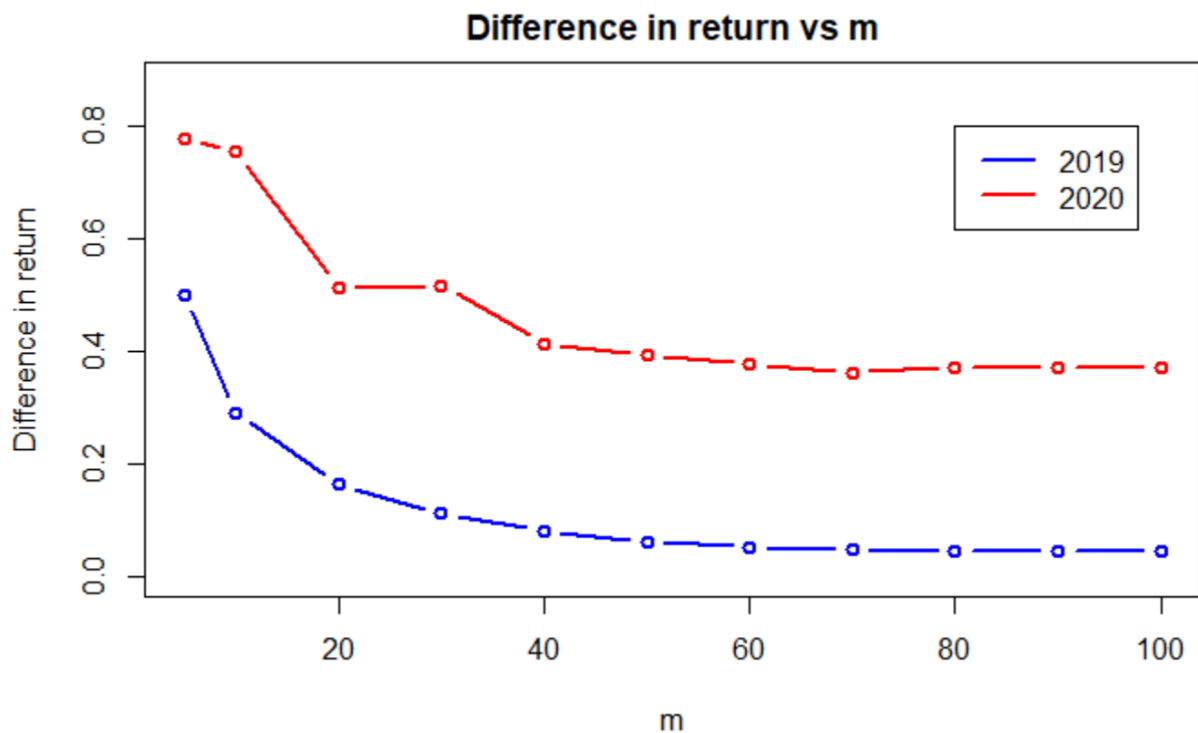
Method 2

The difference in return decreases as we include more stocks in the fund. Therefore, the number of stocks we picked is influenced by the cost of having more stocks, which is unknown to us right now. We need to trade off whether including less stocks or having lower differences in returns is important to our boss.

Here is a quick comparison between the two methods we used:

- **Method 1** - Lower Computing power required to run the model, while having a 20-30% decrease in difference in rate of return (m = 10-100).

- **Method 2** - Greater computing power required, the upside being a 20%-30% increase in difference in rate of return (m = 10 - 100)

Based on the information we collected, if our goal is to have more stocks in our model, then it is best to go with the **first method**, which optimally picks **70 stocks** whereas the **second method,** picks **40 stocks** optimally. Now if the boss is interested in lower differences in returns then method 2 would be the preferred approach.

Another thing to mention to our boss, is how often do we plan to run the models? If we plan to run our modes on a daily basis, method 1 would be preferred as it's less resource intensive and can be calculated in a matter of minutes, as method 2 takes 8+ hours to run (even on the latest hardware). If the boss is focused on running the model on less stocks, and resources is a nonissue, then method 2 is optimal.