

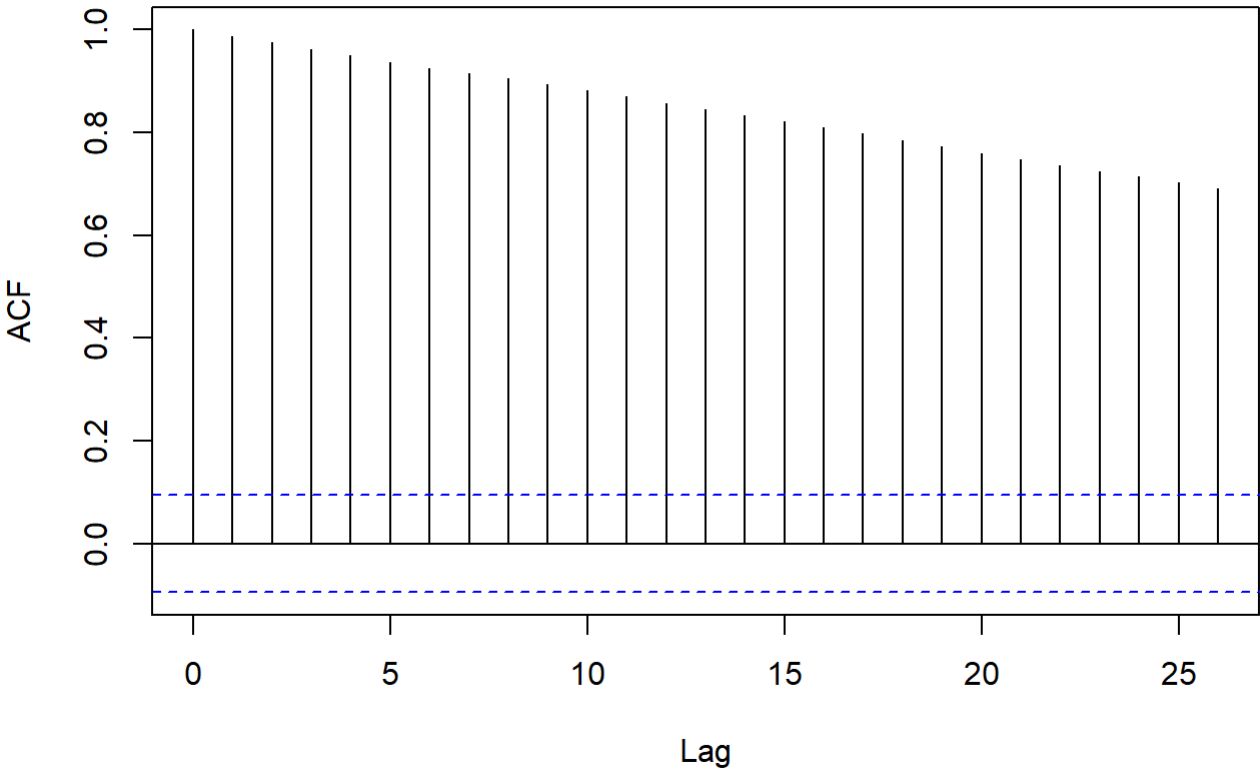
Midterm 3

Luke Letizia

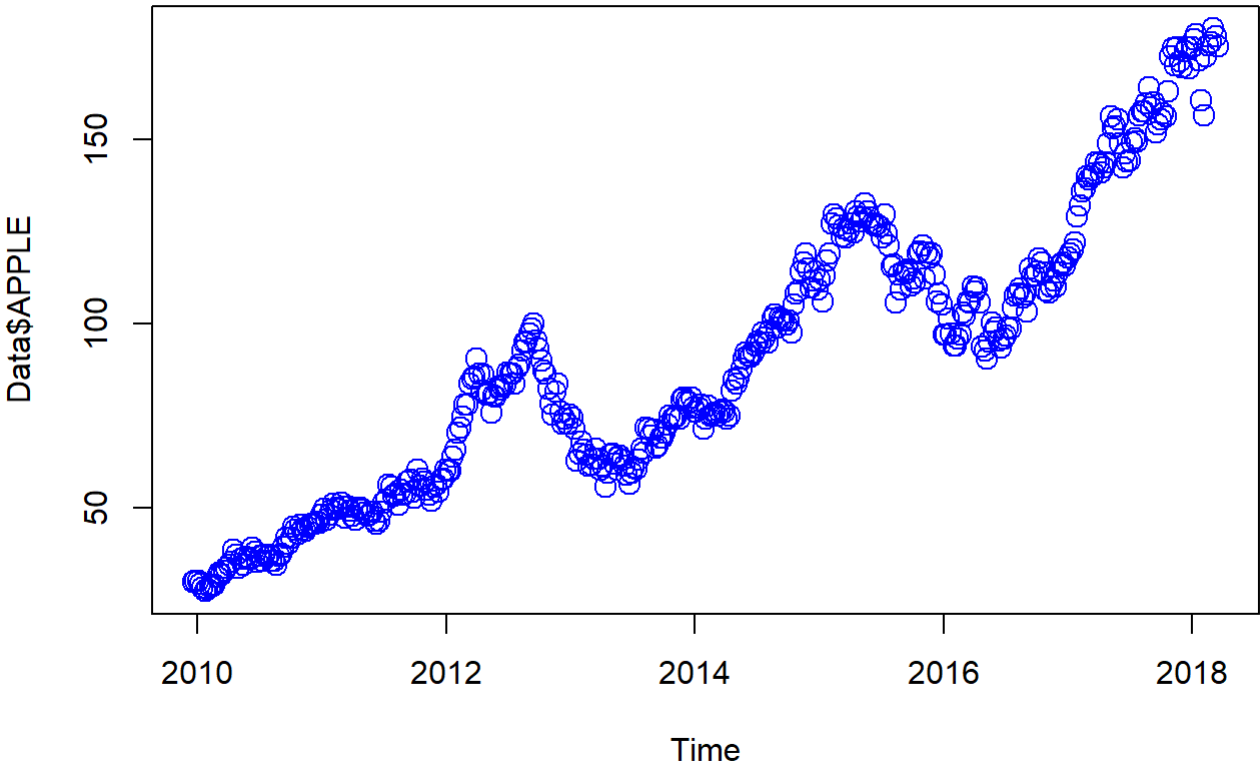
April 18, 2018

Question #1

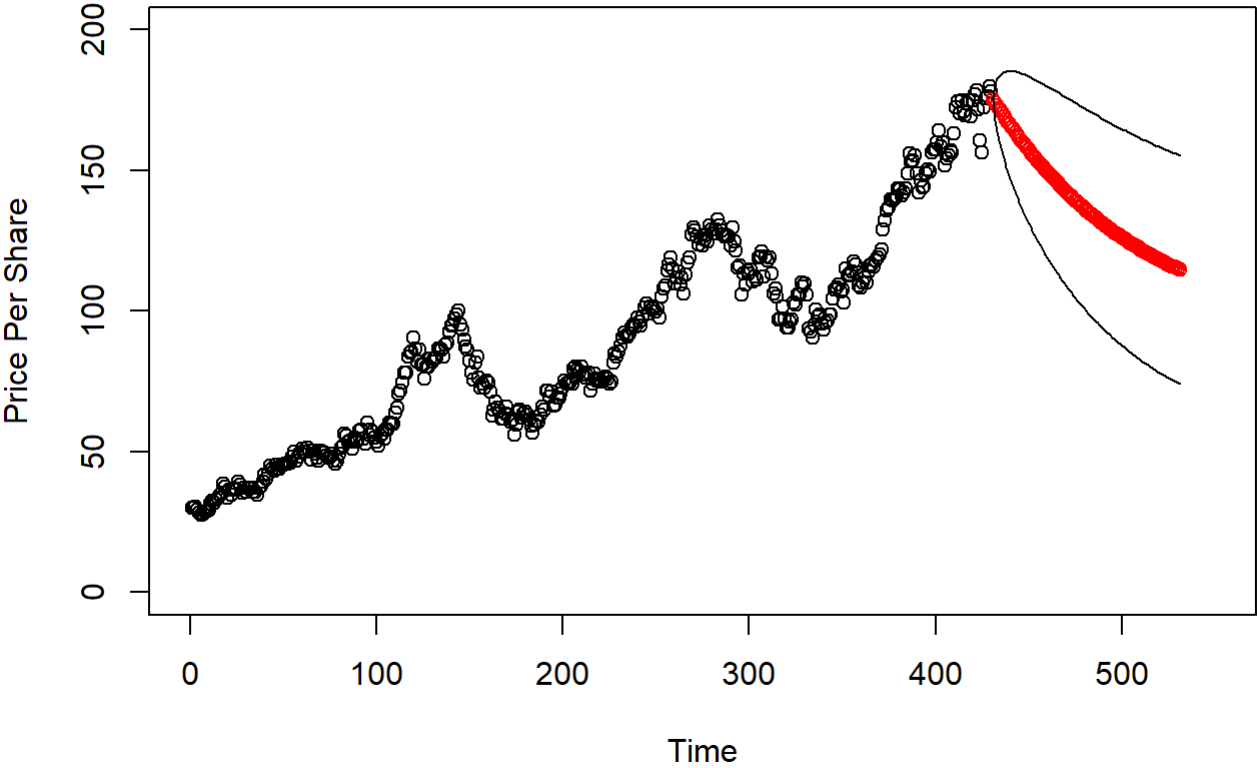
Series y

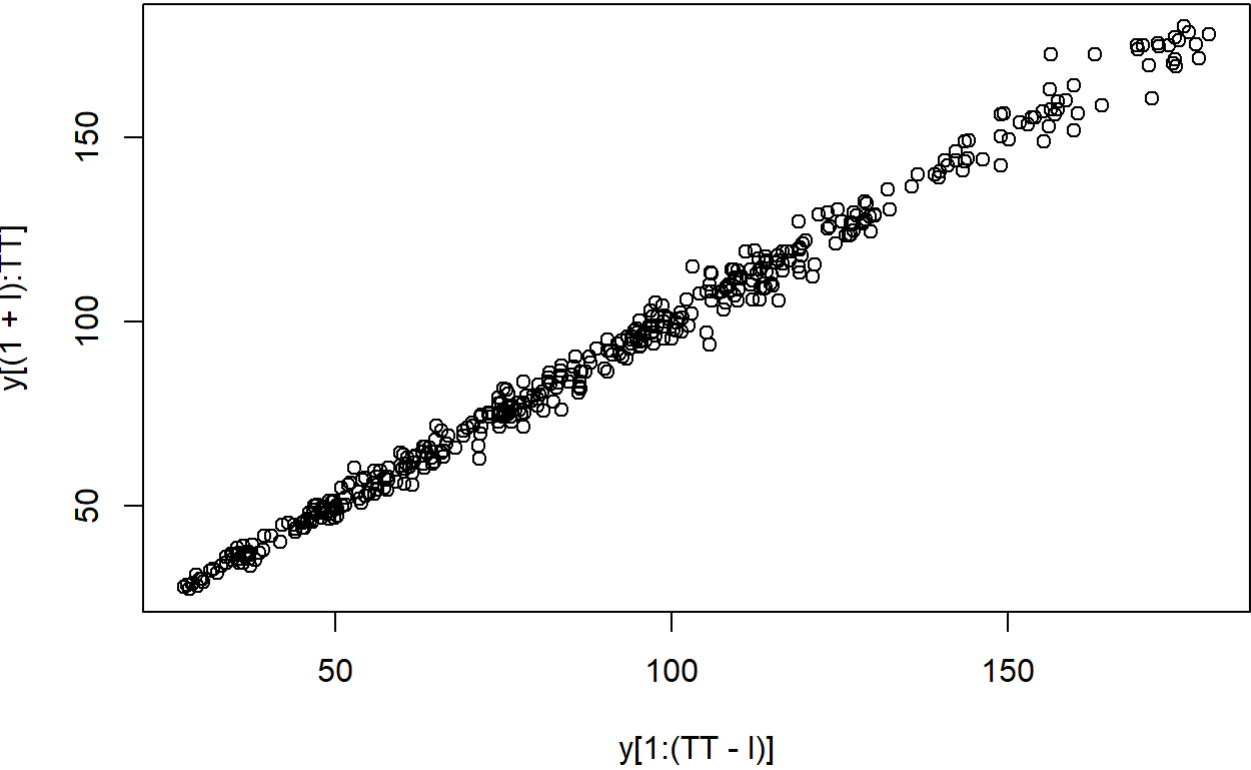
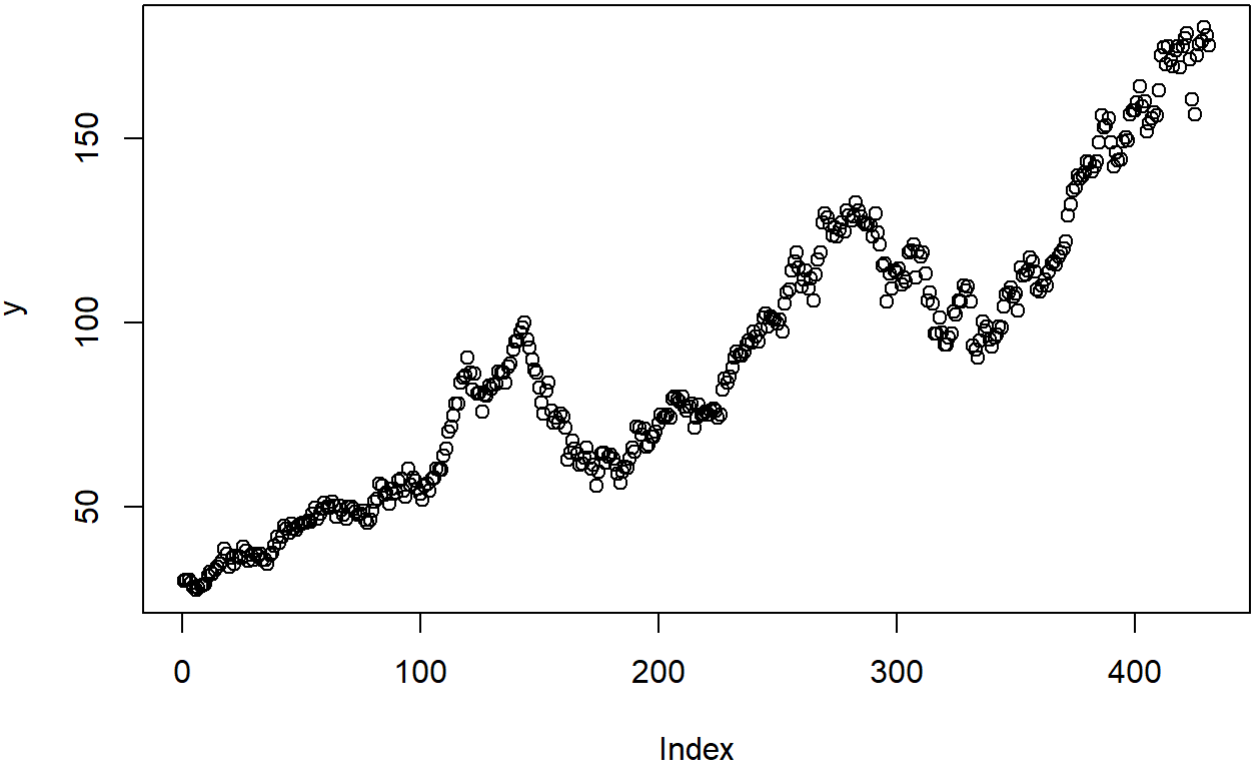


Apple Stock

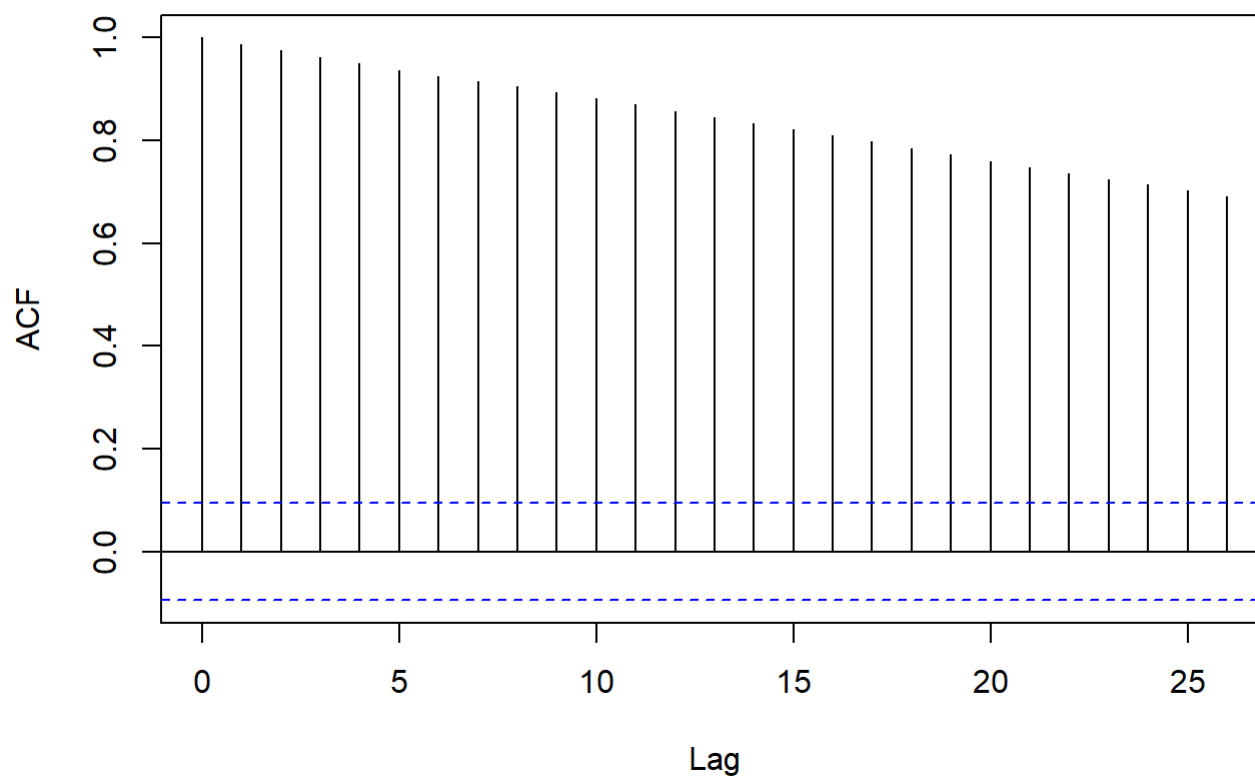


Forecasted Predicted Values





Series y



Question #2

Xij.mat

```
##          1    2    3    4    5    6    7    8
## 2011 101 153 52 17 14 3 4 1
## 2012 99 121 76 32 10 3 1 0
## 2013 110 182 80 20 21 2 0 0
## 2014 160 197 82 38 19 0 0 0
## 2015 161 254 85 46 0 0 0 0
## 2016 185 201 86 0 0 0 0 0
## 2017 178 261 0 0 0 0 0 0
## 2018 168 0 0 0 0 0 0 0
```

Model 1

```
##      [,1]      [,2]      [,3]      [,4]      [,5]      [,6]      [,7] [,8]
## [1,] 102.2144 140.7762 58.22177 24.09069 13.69697 2.492648 2.507289 1
## [2,] 101.6202 139.9577 57.88327 23.95063 13.61734 2.478155 2.492711 0
## [3,] 124.2164 171.0787 70.75417 29.27628 16.64528 3.029197 0.000000 0
## [4,] 149.5526 205.9734 85.18581 35.24773 20.04040 0.000000 0.000000 0
## [5,] 171.5602 236.2837 97.72144 40.43466 0.000000 0.000000 0.000000 0
## [6,] 160.1701 220.5964 91.23354 0.000000 0.000000 0.000000 0.000000 0
## [7,] 184.6661 254.3339 0.000000 0.000000 0.000000 0.000000 0.000000 0
## [8,] 168.0000 0.0000 0.000000 0.000000 0.000000 0.000000 0.000000 0
```

```
##      [,1]      [,2]      [,3]      [,4]      [,5]      [,6]      [,7]      [,8]
## [1,] 101 254.0000 306.0000 323.0000 337.0000 340.0000 344.0000 345.0000
## [2,] 99 220.0000 296.0000 328.0000 338.0000 341.0000 342.0000 342.9942
## [3,] 110 292.0000 372.0000 392.0000 413.0000 415.0000 418.0470 419.2622
## [4,] 160 357.0000 439.0000 477.0000 496.0000 499.6471 503.3155 504.7787
## [5,] 161 415.0000 500.0000 546.0000 568.9895 573.1732 577.3815 579.0600
## [6,] 185 386.0000 472.0000 509.7501 531.2133 535.1193 539.0482 540.6152
## [7,] 178 439.0000 544.1866 587.7101 612.4558 616.9592 621.4890 623.2956
## [8,] 168 399.3803 495.0738 534.6693 557.1817 561.2787 565.3996 567.0433
```

```
##      1      2      3      4      5      6      7      8
## 2011 101 153.0000 52.00000 17.00000 14.00000 3.000000 4.000000 1.000000
## 2012 99 121.0000 76.00000 32.00000 10.00000 3.000000 1.000000 0.994186
## 2013 110 182.0000 80.00000 20.00000 21.00000 2.000000 3.046990 1.215253
## 2014 160 197.0000 82.00000 38.00000 19.00000 3.647059 3.668481 1.463127
## 2015 161 254.0000 85.00000 46.00000 22.98947 4.183746 4.208320 1.678435
## 2016 185 201.0000 86.00000 37.75013 21.46316 3.905980 3.928923 1.567001
## 2017 178 261.0000 105.18659 43.52355 24.74569 4.503352 4.529803 1.806654
## 2018 168 231.3803 95.69351 39.59555 22.51239 4.096925 4.120989 1.643604
```