1. Brockwell and Davis, Problem 1.5

2. Brockwell and Davis, Problem 1.6

3. Brockwell and Davis, Problem 2.3

4. Brockwell and Davis, Problem 2.9

5. Simulate $n = 100$ observations from each of the following AR(1) processes with $\mu = 10$ and $\sigma^2 = 1$. In each case, plot and discuss the nature of the sample autocorrelation function.
   
   (a) $\phi = 0.2$
   (b) $\phi = -0.2$
   (c) $\phi = 0.9$
   (d) $\phi = -0.9$

6. Simulate $n = 100$ observations from each of the following MA(1) processes with $\mu = 10$ and $\sigma^2 = 1$. In each case, plot and discuss the nature of the sample autocorrelation function.

   (a) $\theta = 0.2$
   (b) $\theta = -0.2$
   (c) $\theta = 0.9$
   (d) $\theta = -0.9$

Extra Problems - Mandatory for ST380 students

1*. Brockwell and Davis, Problem 2.1

2*. Brockwell and Davis, Problem 2.5