

STAT 673
Homework 5
due Wed. Oct. 7

Show all work.
Please work in Groups of 2! There are 4 problems.

1. p. 67, Problem 3.11
2. Find the PACF ϕ_{kk} for $k = 0, 1, 2, 3$ for the MA(2) process in Problem 3.11.
3. Simulate a series of 500 observations from the MA(2) process in Problem 3.11 with $\sigma_a^2 = 1$. Plot the simulated series and the sample ACF and PACF. Compare the theoretical ACF and PACF you calculated in Problem 3.11 (c) and Problem 2 with your plots.
4. Find the AR representation of the MA(2) process in Problem 3.11. You should find the first three π weights, i.e., π_1, π_2, π_3 .

Hint: see p. 56 in your book for a derivation!