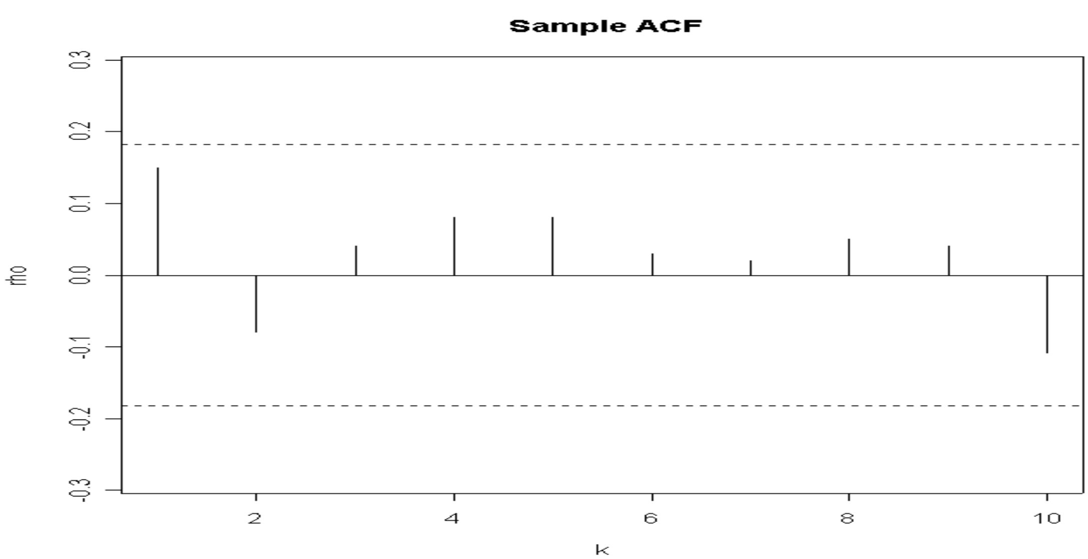
Name:
Course: STAT 329 Time Series
Project: Homework #6
Due: 10/18/02

Page 132 6.1
Identify appropriate time series models from the sample ACF below. Justify your choice using the knowledge of the theoretical ACF for ARIMA models.

a) n=121, data=Zt

k	1	2	3	4	5	6	7	8	9	10
	.15	−.08	.04	.08	.08	.03	.02	.05	.04	−.11

```
n <− 121
k <− seq(1, 10, 1)
rho <− c(.15 , −.08 , .04,  .08,  .08,  .03,  .02,  .05,  .04,  −.11)
ci <− 2/ sqrt (n)
par(lty=1)
plot( k, rho, ylim=c(min(−ci−0.1,rho), max(ci+0.1, rho)), type = h )
title (  Sample ACF )
abline ( h = 0 )
par(lty=2)
abline (  h = −ci)
abline ( h = ci)
```



When k e 1, all sample ACF are inside the 95% CI (calculated by $0 \pm 2 / \sqrt{n}$, indicated by the dash line in the graph above) for the white noise process. This implies that the model could be white noise process: Zt = a_t . It also could be a MA(1) process: Zt = a_t − ,$_1a_{t-1}$. Since the sample ACF for k=1 is close to the upper bound of 95% CI for white noise, and the sample ACF for k > 1 is smaller.