Chapter 6, Problem 4

Add new entries to Exhibit 6.11 on page 111, for the following values:

(a) $\phi = \pm 0.99$.

(b) $\phi = \pm 0.5$.

(c) $\phi = \pm 0.1$.

Chapter 6, Problem 13

A stationary time series of length 121 produced sample partial autocorrelation of $\hat{\phi}_{11} = 0.8$, $\hat{\phi}_{22} = -0.6$, $\hat{\phi}_{33} = 0.08$, and $\hat{\phi}_{44} = 0.00$. Based on this information alone, what model would we tentatively specify for the series?

Chapter 6, Problem 15

The sample ACF for a series and its first difference are given in the following table. Here $n = 100$.

	lag	**1**	**2**	**3**	**4**	**5**	**6**
[]	ACF for Y_t	0.97	0.97	0.93	0.85	0.80	0.71
	ACF for ∇Y_t	-0.42	0.18	-0.02	0.07	-0.10	-0.09

Based on this information alone, which ARIMA model(s) would we consider for the series?

Chapter 6, Problem 17

Consider an AR(1) series of length 100 with $\phi = 0.7$.

(a) Would you be surprised if $r_1 = 0.6$?

(b) Would $r_{10} = -0.15$ be unusual?

Chapter 6, Problem 19

The time plots of two series are shown below.

(a) For each of the series, describe r_1 using the terms strongly positive, moderately positive, near zero, moderately negative, or strongly negative. Do you need to know the scale of measurement for the series to answer this?

(b) Repeat part (a) for r_2.