Topic 5
Simple Descriptive Techniques

1. The following data show the coded sales of company X in successive 4-week periods over 1995–1998.

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII
1995	153	189	221	215	302	223	201	173	121	106	86	87	108
1996	133	177	241	228	283	255	238	164	128	108	87	74	95
1997	145	200	187	201	292	220	233	172	119	81	65	76	74
1998	111	170	243	178	248	202	163	139	120	96	95	53	94

(a) Plot the data.
(b) Assess the trend and seasonal effects.

2 Sixteen successive observations on a stationary time series are as follows:
1.6, 0.8, 1.2, 0.5, 0.9, 1.1, 1.1, 0.6, 1.5, 0.8, 0.9, 1.2, 0.5, 1.3, 0.8, 1.2
(a) Plot the observations.
(b) Calculate r_1.

3. A computer generates a series of 400 observations that are supposed to be random. The first 10 sample autocorrelation coefficients of the series are $r_1 = 0.02$, $r_2 = 0.05$, $r_3 = -0.09$, $r_4 = 0.08$, $r_5 = -0.02$, $r_6 = 0.00$, $r_7 = 0.12$, $r_8 = 0.06$, $r_9 = 0.02$, $r_{10} = -0.08$. Plot the correlogram.