

Due Tuesday, May 2

1. Exercise 11.44
2. Exercise 11.45
3. Exercise 11.47
4. Exercise 11.50
5. Exercise 11.51
6. Exercise 13.1
7. Exercise 13.7
8. Exercise 13.12
9. Some baseball fans believe that the number of home runs a team hits is markedly affected by the altitude of the club's home park. The following table shows the altitudes of the American League ballparks and the number of home runs that each team hit during a recent season. Calculate the sample correlation coefficient,  $r$ . Test whether home run frequency and home park altitude are independent. Use  $\alpha = 0.05$ .

Club	Altitude, $x$	Number of Home Home Runs, $y$
Cleveland	660	138
Milwaukee	635	81
Detroit	585	135
New York	55	90
Boston	21	120
Baltimore	20	84
Minnesota	815	106
Kansas City	750	57
Chicago	595	109
Texas	435	74
California	340	61
Oakland	25	120

10. A window that is manufactured for an automobile has five studs to attach it. A company that manufactures these windows perform "pull-out tests" to determine the force needed to pull a stud out of the window. Let  $Y_i, i = 1, \dots, 5$ , equal the force required at position  $i$  and assume that they are normally distributed with equal variance and mean  $\mu_i$ , respectively. Test  $H_0 : \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5$  versus  $H_a : \text{Not } H_0$  at the level  $\alpha = 0.01$  using the following data.

$Y_1$	$Y_2$	$Y_3$	$Y_4$	$Y_5$
92	100	143	142	147
90	108	149	155	144
87	98	138	119	160
105	110	136	134	149
86	114	139	133	152
83	97	120	146	131
102	94	145	152	134