04b Sample Examination Problems Chapter 12

1. Suppose that we have 10 random observations (x_i, y_i), $i = 1, \ldots, 10$ of random variables (X, Y) that have a bivariate normal distribution.

x_i	0.33	1.01	–0.41	2.10	–0.29	–1.27	–0.48	0.31	–1.56	–0.81
y_i	1.60	1.47	–1.82	2.50	0.34	–1.37	–0.09	0.20	–1.16	–2.16

(a) Find the sample correlation coefficient between X and Y.

(b) Test the null hypothesis that the population correlation coefficient is equal to zero against the alternative that it is greater than zero.