Problem 7.2 The data below show consumption of margarine (in ounces per person per week) and its real price, for the UK.

Year	Consumption	Price	Year	Consumption	Price
1970	2.86	125.6	1980	3.83	104.2
1971	3.15	132.9	1981	4.11	95.5
1972	3.52	126.0	1982	4.33	88.1
1973	3.03	119.6	1983	4.08	88.9
1974	2.60	138.8	1984	4.08	97.3
1975	2.60	141.0	1985	3.76	100.0
1976	3.06	122.3	1986	4.10	86.7
1977	3.48	132.7	1987	3.98	79.8
1978	3.54	126.7	1988	3.78	79.9
1979	3.63	115.7			

(a) Draw an *XY* plot of the data and comment.

(b) From the chart, would you expect the line of best fit to slope up or down? *In theory*, which way should it slope?

(c) What would you expect the correlation coefficient to be, approximately?

(d) Calculate the correlation coefficient between margarine consumption and its price.

(e) Is the coefficient significantly different from zero? What is the implication of the result?

Problem 7.8 (a) For the data given in Problem 7.2, estimate the sample regression line and calculate the R^2 statistic. Comment upon the results.

(b) Calculate the standard error of the estimate and the standard errors of the coefficients. Is the slope coefficient significantly different from zero? Is demand inelastic?

(c) Test the overall significance of the regression and comment upon your result.

Problem 7.10 Predict margarine consumption given a price of 70. Use the 99% confidence level.