Chapter 3: Correlation and Regression

British Bus Company Expenses/Mileage

Description: Total deflated expenses (*Y*, in £100,000s) and Car Miles (*X*, in millions) for a British bus company over 33 time periods.

Data:

Period	Cost (Y)	Miles (X)	Period	Cost (Y)	Miles (X)	Period	Cost (Y)	Miles (X)
1	2.139	3.147	12	2.027	3.141	23	2.244	3.844
2	2.126	3.16	13	1.985	2.928	24	2.153	3.276
3	2.153	3.197	14	1.956	3.063	25	2.025	3.184
4	2.153	3.173	15	2.004	3.096	26	2.007	3.037
5	2.154	3.292	16	2.001	3.096	27	2.018	3.142
6	2.282	3.561	17	2.015	3.158	28	2.021	3.159
7	2.456	4.013	18	2.132	3.338	29	2.004	3.139
8	2.599	4.244	19	2.195	3.492	30	2.093	3.203
9	2.509	4.159	20	2.437	4.019	31	2.139	3.307
10	2.345	3.776	21	2.623	4.394	32	2.27	3.585
11	2.059	3.232	22	2.523	4.251	33	2.464	4.073

Task 1:

Regression Statistics

(a)	Slope, *b*	:_____
(b)	Y-intercept, *a*	:_____
(c)	Regression equation	:_____
(d)	Pearson correlation, *r*	:_____
(d)	Coefficient of determination, r^2	:_____
(e)	Observations, *n*	:_____

Task 2:

Scatterplot of data with regression equation superimposed.