

1. Using the following set of data

x :	100	110	120	130	140	150	160	170	180	190	200
y :	301	354	362	244	299	197	234	165	176	252	128

and the standard linear model

- (a) fit the best (least squares) regression line,
 - (b) construct 90% confidence intervals for the 'true' slope, intercept and σ .
2. Using the data provided and assuming that they have been generated from a bivariate Normal distribution, construct a 95% confidence interval for each of its five parameters μ_x , σ_x , μ_y , σ_y and ρ (the last of these, as we know, will be only approximate).
3. Using the following data

x_1 :	18	24	19	15	26	18	25	30	18	16
x_2 :	0	1	1	0	0	1	1	0	0	0
x_3 :	249	319	567	323	303	506	347	232	571	312
y :	182	88	45	156	194	52	83	218	148	166

and using the usual multi-linear model

- (a) find the best (least squares) regression coefficients and their standard errors,
- (b) compute the fitted values of y (denoted \hat{y}), the corresponding residuals, and the ensuing $\hat{\sigma}$.