MS Module 16: Regression estimates – homework assignment

(The attached PDF file has better formatting.)

Homework assignment:

Solve one of the following end of chapter problems, showing all work. The numerical answers are in the appendix to the textbook; for the homework assignment, show how the answer is derived.

- Problem 13 (a), (b), (c), and (d) on page 623 (1st ed) / page 637 (2nd ed).
  - Part (a) derives the estimated least squares equation; show how to derive β_0 and β_1
  - Part (b) uses the estimates from Part (a) to derive the fitted value and the residual.
  - Part (c) computes SSE; divide by the degrees of freedom to estimate σ^2 and σ.
  - Part (d) uses the complement of the ratio of SSE to SST.
- Problem 17 (b), (c), (d), and (e) on page 624 (1st ed) / page 638 (2nd ed).
  - Part (b): show how to derive β_0 and β_1
  - Part (c) uses the estimates from Part (a) to derive the fitted value.
  - Part (d): show how to derive SSE, then σ^2, then σ.
  - Part (d) uses the complement of the ratio of SSE to SST.