Written Answers for Chapter 1 Problem 24

1. The residuals are as follows:

1 2 3 4 5 6 7 8

-9.4903394 0.4391645 1.4744125 11.5096606 -2.4550914 -12.7723238 -6.5960836 14.4039164

9 10 11 12 13 14 15 16

-10.4550914 2.5096606 9.2629243 6.2276762 3.3686684 -8.5255875 12.4391645 -19.7018277

17 18 19 20 21 22 23 24

0.3334204 11.2981723 -22.7723238 -2.5608355 -8.5960836 -3.6665796 4.3334204 -0.5960836

25 26 27 28 29 30 31 32

-0.7370757 7.3334204 -11.4903394 -1.5960836 6.3334204 6.3686684 3.2981723 15.4039164

33 34 35 36 37 38 39 40

-9.4903394 -1.4903394 -11.4550914 -2.5608355 11.4039164 -2.7370757 7.3334204 12.5449086

41 42 43 44 45

-3.7370757 4.5096606 -2.4903394 1.4391645 2.4039164

The sum of the squared residuals is 3416.377. This value is the SSE and it represents the minimum value of Q in (1.8).

1. The variance is the SSE divided by 2-n. The MSE (variance) is 3416.377/43 which is equal to 79.45. The is equal to 8.91. The MSE is expressed in minutes.