

Name _____

Email _____

Reading Quiz for Sheather Chapter 3

1. [based on Ch 3, ex #1] A business analyst fits the model

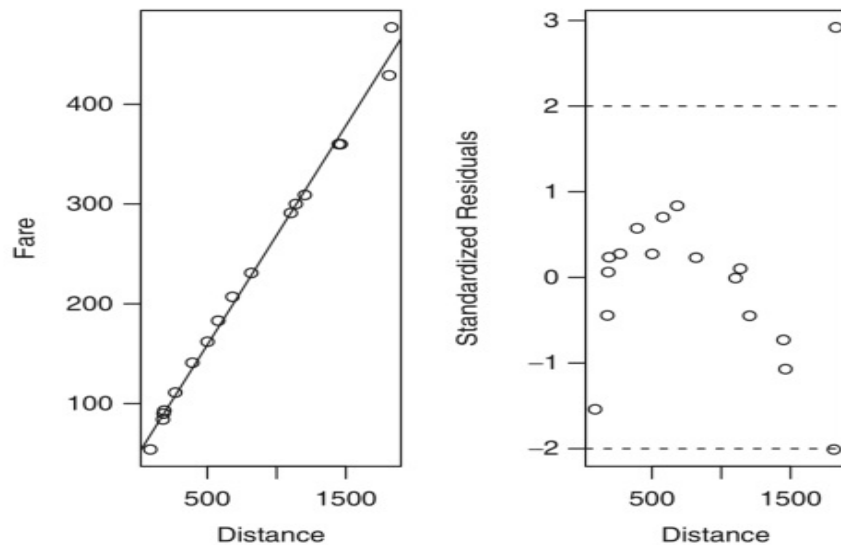
$$\text{Fare} = \beta_0 + \beta_1 \text{Distance} + \epsilon \quad (1)$$

to a data set containing the air fare in dollars and distance in miles to each of 17 U.S. cities from City A. The regression summary and a couple of plots are given below.

```
Call:
lm(formula = Fare ~ Distance)

Coefficients:
            Estimate      Std. Error    t value    Pr(>|t|)
(Intercept)  48.971770      4.405493     11.12    1.22e-08 ***
Distance      0.219687      0.004421     49.69    <2e-16 ***
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Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 10.41 on 15 degrees of freedom
Multiple R-Squared: 0.994, Adjusted R-squared: 0.9936
F-statistic: 2469 on 1 and 15 DF, p-value: < 2.2e-16
```



Does the linear model above provide a good fit? If yes, give two careful reasons why. If no, give two careful suggestions for improving the model. Either way, use specific ideas from Chapter 3.

Use the back of this sheet to provide your answer.