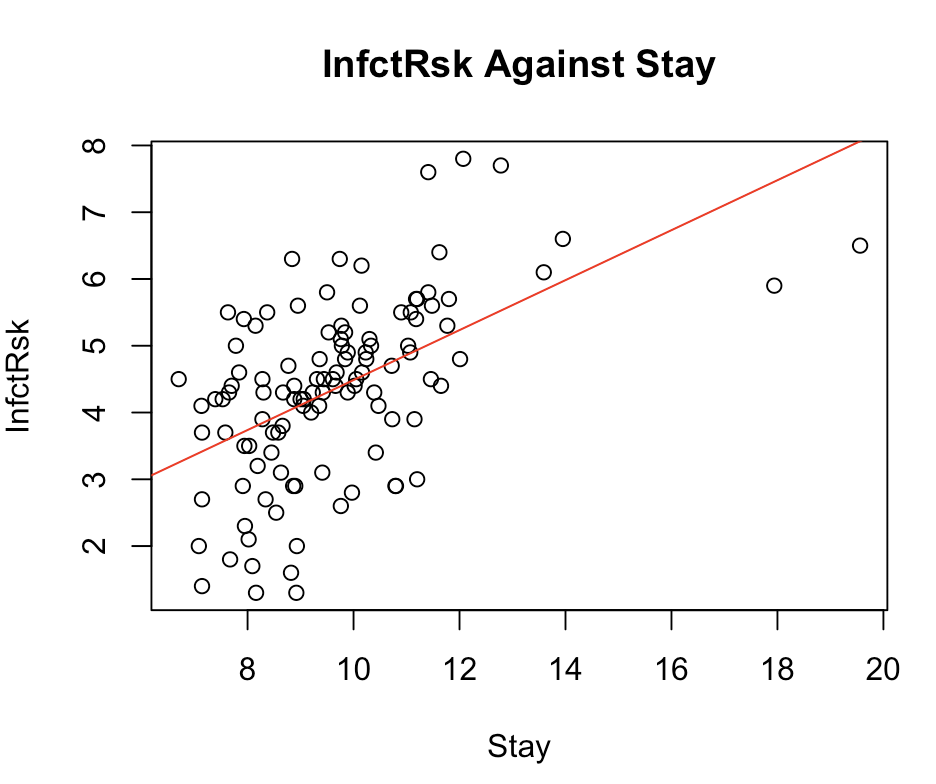
Yunlu Li (yl4df)

STAT 5120

Homework 3

1. (a) The constant variance assumption seems to be violated. There are some outliers: some patients stay very long.



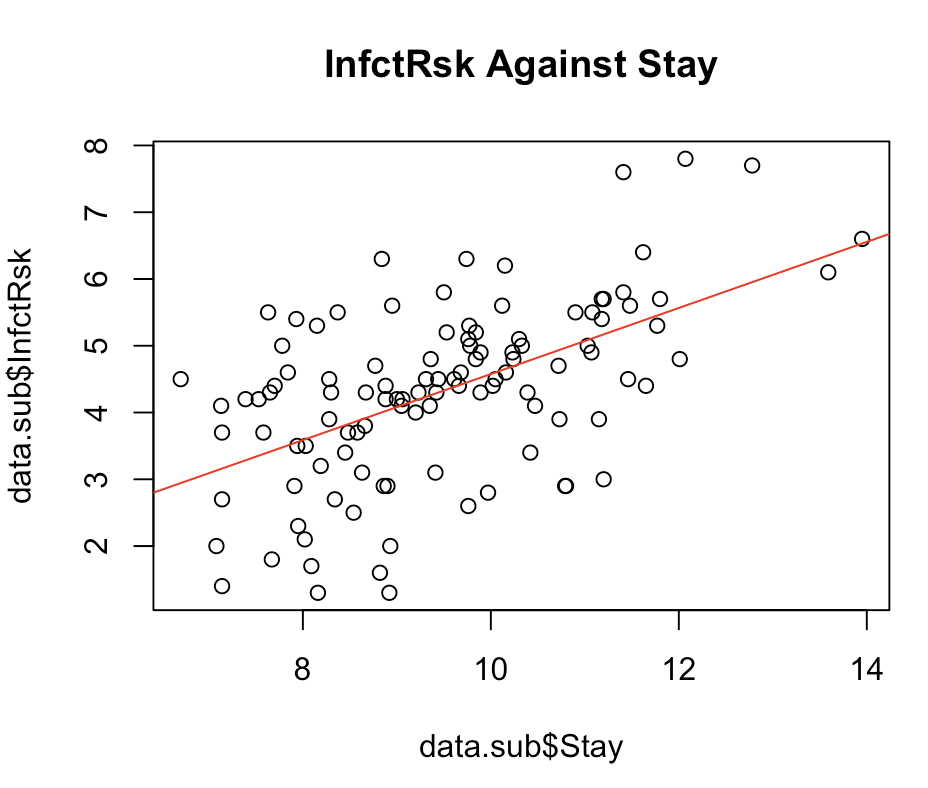
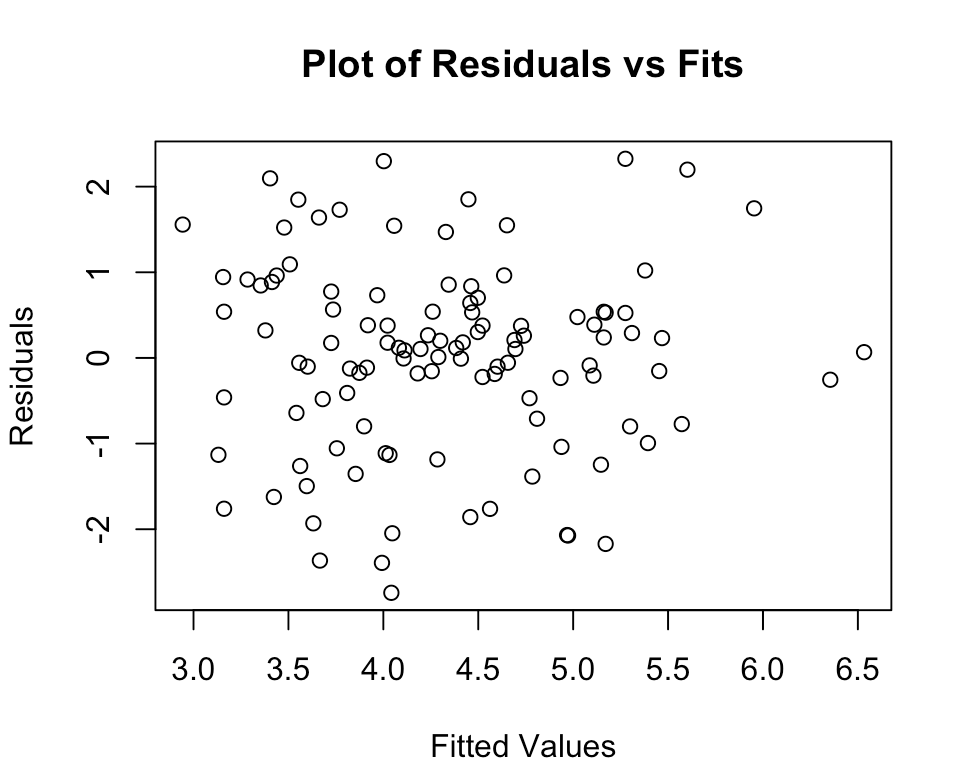
(b) The residuals fall in a horizontal band around 0 with no apparent pattern, but they do not have similar variation for different fitted values, so the constant variance assumption is violated.

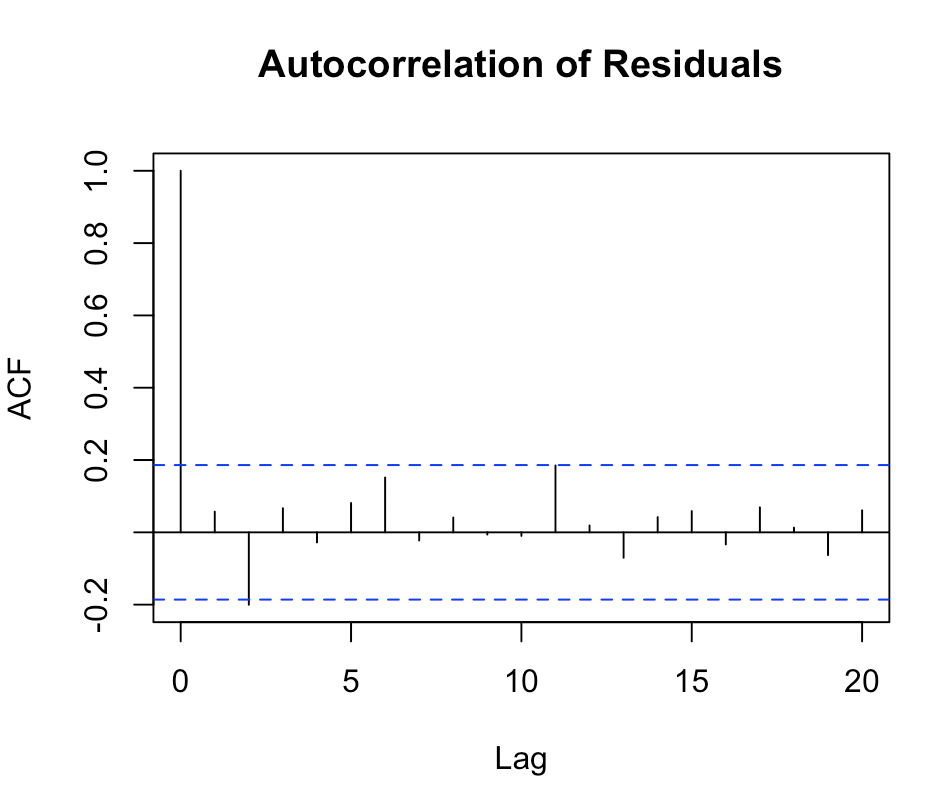
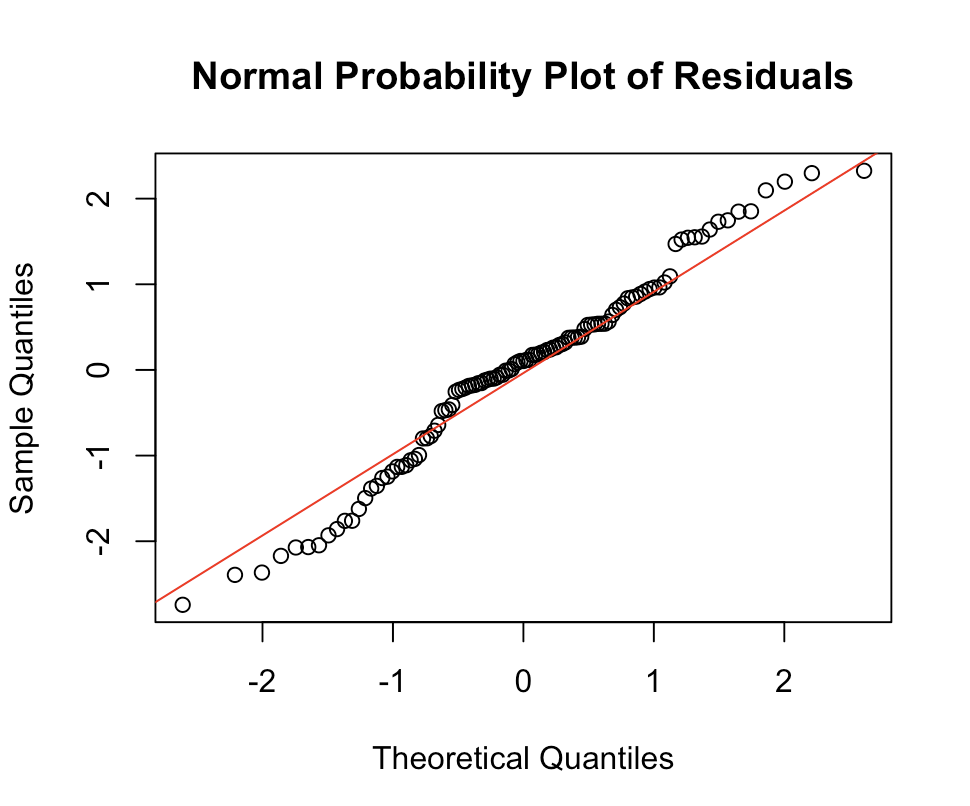


(c) The estimated slope is 0.37422.

(d) The is 0.2846.

(e) The following plots agree with the assumptions for a regression model.

(f) The estimated slope is 0.49515, which is greater than the one from 1 (c).

(g) The is 3019, which is greater than the one from 1 (c).

(h) Overall, removing the outliers is a good step. The presence of outliers makes assumptions of regression model violated and leads to a lower determinant coefficient.