Q3

- Estimated model
$$\hat{f}(Y) = -0.98772 + 0.84615 * \log(\text{age})$$
- 95% Confidence Interval for Intercept:

  b0 = [-1.1008,-0.8747]

  95% Confidence Interval for slope:

  b1 = [0.7963,0.8959]
- If age is doubled, we would expect mean of FEV increase by 79.7697 percent.
- For the last model looking at the residual vs fitted plot, the residuals are equally spread around the horizontal line which indicate a linear relationship and the residuals are spread evenly across the fitted value which indicates constant variance. Also looking at the normal Q-Q plot since residuals are lined well on the straight dashed line we can say that residuals are normally distributed. Since for the last model all the assumptions are met and it has lower SSE(looking at the ANOVA analysis) which indicates a better fit than the model on question 2, I prefer using the model on q3.