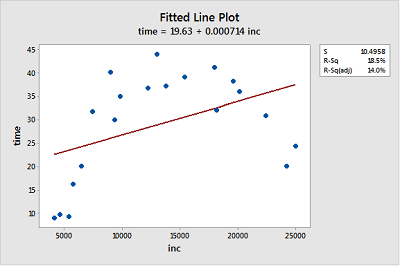
Practice Set: Visual Inspection of Plots

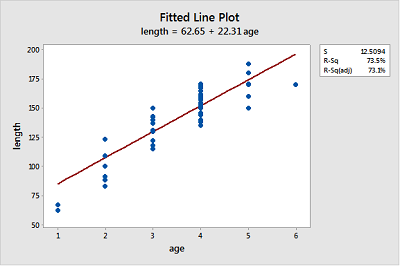
1. **Income and time to first child**: The dataset [incomebirth.txt](https://onlinecourses.science.psu.edu/stat501/sites/onlinecourses.science.psu.edu.stat501/files/data/incomebirth.txt) contains husband’s annual incomes (, in dollars) and time (, in months) between marriage and first child for couples. (As you can tell by the incomes, the data set is rather old!)
   1. Create a fitted line plot treating as the response and as the predictor.
   2. Looking at the plot, is a linear function adequate in describing the relationship between and ? Explain your answer.
2. **Bluegill fish**: The data set [bluegills.txt](https://onlinecourses.science.psu.edu/stat501/sites/onlinecourses.science.psu.edu.stat501/files/data/bluegills.txt) contains the lengths (in ) and ages (in ) of bluegill fish.
   1. Create a fitted line plot treating as the response and as the predictor.
   2. Looking at the plot, is a linear function adequate in describing the relationship between and ? Explain your answer.
3. **Gesell Adaptive Scores**: The data set [adaptive.txt](https://onlinecourses.science.psu.edu/stat501/sites/onlinecourses.science.psu.edu.stat501/files/data/adaptive.txt) contains the Gesell adaptive scores and ages (in ) of children with cyanotic heart disease.
   1. Create a fitted line plot treating as the response and as the predictor.
   2. Looking at the plot, is a linear function adequate in describing the relationship between and s? Explain your answer.

# Answers

1. No, the data displays a curvilinear relationship between and .



1. Probably not, because the growth pattern seems steeper than the fitted line for ages 1-4 and then length seems to level out for ages 5-6.



1. The linear function describes the relationship reasonably well for most of the data points, but seems strongly influenced by the point for at the far right and the point with at the top of the does not seem to fit the overall trend very well.

