

Worksheet 21 - residual plots

Wednesday, April 15, 2026

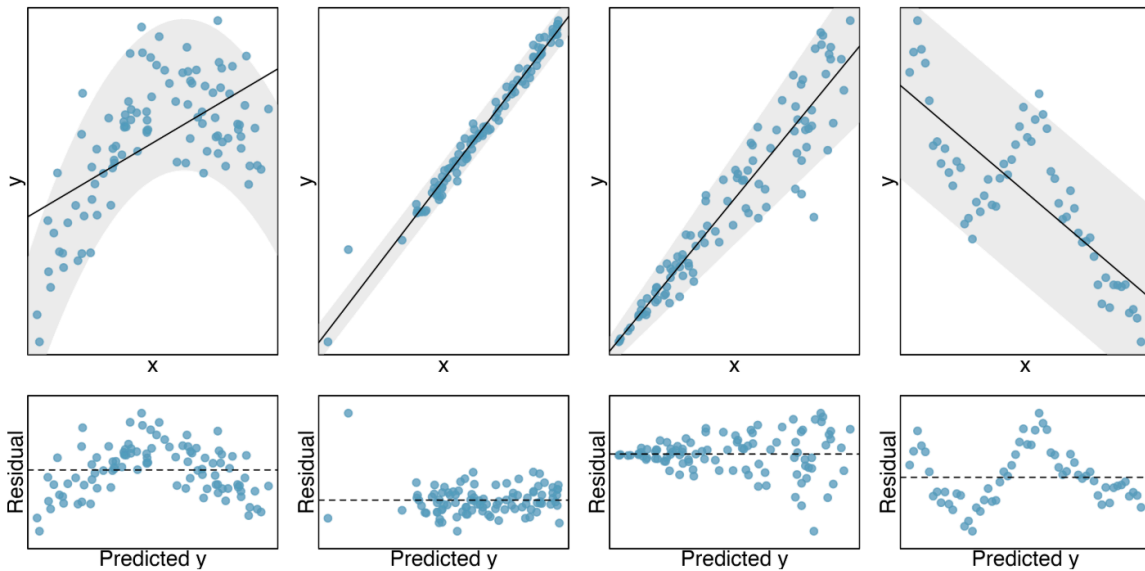
Math 58B - Jo Hardin

Name: _____

Names of people you worked with: _____

Have you ever had lunch with a professor? If so, who? If not, you should!

Task: For each of the four plots below, suggest which of the linear model technical conditions seem to be violated.



Solution:

1. The average value of Y is not a linear function of X.
2. The outlier could indicate violation of any of the conditions! Or it might just indicate a bad data entry problem. If it is a true value, you probably shouldn't use a linear model on these data. For sure, there needs to be further investigation.
3. As X increases, the variability around the line increases, so there is not equal variability.
4. The points have a periodic relationship which is clearly not linear. However, practice might tell you that the bigger violation is independence. That is, it is possible the model is describing the high temperature in Claremont over the year in which case the observational units (day) are not independent.

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praise()
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[1] "You are extraordinary!"
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