

## 7. Model diagnostics

- We know how to estimate parameters and make hypothesis tests for linear models.
- We know how to make predictions, with uncertainty estimates, using linear models.
  - ① What if our conclusions depend on our choice of model?
  - ② What if our model is a poor description of the data?
  - ③ What if a much better model exists?
  - ④ What if the model describes some parts of the data okay, but not other parts?
- How can we answer these questions?
  - ① **Graphical investigations.** Make informative plots.
  - ② **Quantitative investigations.** Find informative tests, or other interpretable statistics.