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ISLR 2.4.1

(a) Better: A more flexible approach will suit the data more closely, and with the large sample size, a better fit will be obtained than with an inflexible approach.

(b) Worse: The limited number of data points would be overfit by a flexible method.

(c) Better: A model with greater degrees of freedom would achieve a superior fit.

(d) Worse: Flexible will overfit. The large noise term will make the data artificially more complex.

ISLR 2.4.7

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  - $\|\mathbf{Obs}_1 - [0,0,0]\|_2 = 3$
  - $\|\mathbf{Obs}_2 - [0,0,0]\|_2 = 2$
  - $\|\mathbf{Obs}_3 - [0,0,0]\|_2 = \sqrt{(10)} \approx 3.2$
  - $\|\mathbf{Obs}_4 - [0,0,0]\|_2 = \sqrt{(5)} \approx 2.2$
  - $\|\mathbf{Obs}_5 - [0,0,0]\|_2 = \sqrt{(3)} \approx 1.4$
  - $\|\mathbf{Obs}_6 - [0,0,0]\|_2 = \sqrt{(3)} \approx 1.7$
- Green. Observation number 5 is the closest neighbor for $K = 1$.
- Red. Observations number $2, 5, 6$ are the closest neighbors for $K = 3$. 2 is Red, 5 is Green, and 6 is Red.
- Small. A small K would be more flexible for a non-linear decision boundary, but a big K would attempt to suit a more linear boundary since it considers more points.