

2. Now we try to better understand bias and variance in modeling. Suppose there were a different problem where the true structure had a little bit of curvature in it but not very much—much less than the one we've been studying so far. Suppose that everything else is as it was in the example.

(a) Suppose we fit a straight line using the $n = 10$.

i. Compared to Figure 2 would you expect to see more bias or less bias for this model fit?

➔ Less bias, because less curvature means get similar with linear model.

ii. Compared to Figure 2 would you expect to see more variance or less variance for this model fit?

-> More variance due to bias-variance trade-off.

(b) As we increase the sample size for this situation, which gets smaller: bias, variance, or both?

➔ Both will get smaller