6.10 Review Questions

6.10.R1

1/1 point (graded)

You are working on a regression problem with many variables, so you decide to do Principal Components Analysis first and then fit the regression to the first 2 principal components. Which of the following would you expect to happen?:

- ○ A subset of the features will be selected
- ○ Model Bias will decrease relative to the full least squares model
- ● Variance of fitted values will decrease relative to the full least squares model
- ○ Model interpretability will improve relative to the full least squares model

✔

Explanation

While some forms of dimensional reduction will cause the first or fourth to occur, that is not the case with PCA. When using dimensional reduction we restrict ourselves to simpler models. Thus, we expect bias to increase and variance to decrease.

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ⓘ Answers are displayed within the problem