Data Analysis and Statistical Inference
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In-Video Quiz Questions for Unit 6: Part 3 – Outliers in linear regression

(05:03)

1. True or false: Influential points always reduce R-squared.

   (a) True
   (b) False

(06:30)

2. Which of following is true?

   (a) Influential points always change the intercept of the regression line.
   (b) Influential points always increase R-squared.
   (c) It is much more likely for a low leverage point to be influential, than a high leverage point.
   (d) When the data set includes an influential point, the relationship between the explanatory variable and the response variable is always nonlinear.
   (e) None of the above.

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Answers:

1. b

Explanation: See the remainder of the video for the explanation.

2. e

Explanation: Influential points change the slope (not necessarily the intercept). They can reduce R-squared if the remainder of the data show a strong relationship and there is only one or few points that are outside the trajectory of the regression line. High leverage points (points farther from the center of the data) are more likely to be influential. An influential point does not necessarily change the form of relationship between the variables.