Stat 346 Homework 2

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Feb. 13, 2014

1 Problem 1, KNN #2.10

2 Problem 2

2.1 Part a

The confidence interval for β_1 is defined as follows:

$$\beta_1 \pm t_{1-\alpha\backslash 2,n-1}(s(b_1)) \tag{1}$$

Substituting the provided values, we get:

$$3 \pm 2.09302 \tag{2}$$

2.2 Part b

$$H_0 : \beta_1 = 4 \tag{3}$$

$$H_a : \beta_1 \neq 4 \tag{4}$$

Based on this, we can set up a test statistic:

$$t^* = \frac{b_1 - 4}{s(b_1)} = -1 \tag{5}$$

How does one calculate the p value?
Ultimately, I think we fail to reject H_0.

3 Problem 3

3.1 Part a

With sufficient smoothing, the relationship is vaguely linear.

3.2 Part b

3.3 Part c