

# Stat 346 Homework 2

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## 1 Problem 1, KNN #2.10

## 2 Problem 2

### 2.1 Part a

The confidence interval for  $\beta_1$  is defined as follows:

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

Substituting the provided values, we get:

$$3 \pm 2.09302 \quad (2)$$

### 2.2 Part b

$$H_0 : \beta_1 = 4 \quad (3)$$

$$H_a : \beta_1 \neq 4 \quad (4)$$

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

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

How does one calculate the p value?

Ultimately, I think we fail to reject  $H_0$ .