

ECO 240 Statistics II

Quiz 2, April 20, 2009

Questions and Answers

Based on the estimated results below, answer the following questions.

Source	SS
Model	A
Residual	500
Total	800

Number of Obs. = 10
 $R^2 = B$

y	Coef.	Std.Error	t
x	-3	1.5	C
constant	12		

Q1: Compute values for A, B and C. (2 points each)

$$A: SSR = SST - SSE = 800 - 500 = 300$$

$$B: R^2 = SSR / SST = 300 / 800 = 3/8 = 0.375$$

$$C: t = b_1 / Sb_1 = -3 / 1.5 = -2$$

Q2: Test $H_0: \beta_1 = 0$, $H_1: \beta_1 \neq 0$, $\alpha = 0.05$

a. Write down the complete decision rule (2 points)

$$\text{Reject } H_0 \text{ if } t < -t_{8, 0.025} = -2.306 \text{ or if } t > t_{8, 0.025} = 2.306$$

b. Write down your decision. (2 points)

$$\text{Fail to reject } H_0 \text{ since } -2.306 < t (= -2) < 2.306.$$

Use the necessary t-table value:

$$t_{10, 0.05} = 1.812$$

$$t_{10, 0.025} = 2.228$$

$$t_{9, 0.05} = 1.833$$

$$t_{9, 0.025} = 2.262$$

$$t_{8, 0.05} = 1.860$$

$$t_{8, 0.025} = 2.306$$