Econ 7331 | Professor Chris Murray
Econometrics 1 | McElhinney 211 D
Spring 2008 | Email: cmurray@mail.uh.edu

Problem Set 4

Due Tuesday, March 11, in class

1. Consider the following regression model:

$$y_i = \beta_1 X_{1i} + \beta_2 X_{2i} + u_i$$

where $u_i \sim iid(0, \sigma^2)$.

Use the regression output that follows to test the hypotheses below against their 2-sided alternatives.

a. $$H_0 : \beta_1 + \beta_2 = 4$$

b. Same hypothesis as in part a, but now assume Gaussian errors.

c. $$H_0 : \beta_1^2 = 4$$

d. $$H_0 : \beta_1^3 + \sqrt{\beta_2} = -6$$

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Dependent Variable: Y
Method: Least Squares
Date: 04/04/07   Time: 14:01
Sample: 1 25
Included observations: 25
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     Variable      Coefficient Std. Error t-Statistic  Prob.
==============================================================
        X1          -1.895458   0.414918  -4.568269   0.0001
        X2           4.339714   2.767777   1.567942   0.1306
==============================================================
R-squared            0.452989    Mean dependent var 2.272990
Adjusted R-squared   0.429206    S.D. dependent var 8.642373
S.E. of regression   6.529389    Akaike info crit.  6.667122
Sum squared resid    980.5573    Schwarz criterion  6.764632
Log likelihood      -81.33903    Durbin-Watson stat 2.188954
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   Coefficient Covariance Matrix

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                 X1          X2
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     X1       0.172157   -0.625764
     X2      -0.625764    7.660589
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```