c. Following the regression in part (b), we carry out the NR^2 test using the right-hand-side variables in (XR8.6b) as candidates related to the heteroskedasticity. The value of this statistic is 59.03. What do we conclude about heteroskedasticity, at the 5% level? Does this provide evidence about the issue discussed in part (b), whether the error variation is different for married and unmarried individuals? Explain.

d. Following the regression in part (b) we carry out the White test for heteroskedasticity. The value of the test statistic is 78.82. What are the degrees of freedom of the test statistic? What is the 5% critical value for the test? What do you conclude?

C. Since we have EDUC, EXPER, METRO and FEMALE four variables, the degree of freedom $= 5-1$.

Thus, the test statistic $NR^2 \sim \chi^2_4$,

and with $\alpha = 0.05$, $\chi^2_{0.95,4} = 9.48$

Since $59.03 > 9.48$, we reject the null hypothesis.

Therefore, they related to the heteroskedasticity.

It provide evidence about the issue discussed in part (b), that is, the error variation is not the same for all observation based on the heteroskedasticity.

d.

The White test uses: $Z_2 = EDUC$

$Z_3 = EXPER$

$Z_4 = Metro$

$Z_5 = Female$

$Z_6 = EDUC^2$

$Z_7 = EXPER^2$

$Z_8 = EDUC \times EXPER$

$Z_9 = EDUC \times Metro$

$Z_{10} = EDUC \times Female$

$Z_{11} = EXPER \times Metro$

$Z_{12} = EXPER \times female$

$Z_{13} = Metro \times female$

$\Rightarrow S = 13$, so we have 12 degree of freedom

The critical value $\chi^2_{(0.95,12)} = 21.026$

To sum up, since the test statistic is 78.82, which is greater than 21.026, we reject H_0.