

Test 2 Corrections

1) a, d

5d) When controlling for alcohol consumption, smoking status does have a significant effect on life expectancy because the p-value from the t-test for that β -coefficient is less than 0.05.

7b) The full F-test is more reliable than the nested F-test. Reliability hinges on the assumptions being met. For the nested F-test, we have to check the assumptions for both the full and reduced models, whereas we only need to check the full model for the full F-test. Therefore, the full F-test will always be equally or more reliable than the nested F-test, since its assumptions are a subset of the nested F-test's assumptions. In terms of this problem specifically, the residual plot for model 1 shows some signs of funneling, so the constant variance assumption may not be met. Thus, not all the assumptions for the reduced model are met, (and model 1 is not used at all in the full F-test) so the nested F-test is less reliable than the full F-test.