Homework 3

To submit via e-mail by h 14:00, May 31

1. Prove that Holm's method controls the FWER at level α.

2. Consider a multiple testing procedure that is more conservative than Benjamini-Hochberg (BH): letting $p_{(i)}$ be the ordered p-values with corresponding hypothesis $H_{(i)}$, then no matter how the p-values come out, this procedure only rejects $H_{(1)}, \ldots, H_{(i_0)}$ where $i_0 \leq i_{\text{BH}}$ in which i_{BH} is the BH step-up point at level α. Under independence, is such procedure automatically guaranteed to control the FDR at the nominal level α? Explain why or why not. [We are not expecting a complete proof either way. A careful, clear and convincing argument would do the job just fine here.]