Assignment 4 - 0679576 Graham Eckel

4a)
Let Alpha = 0.1 for 90% family wise confidence interval. There are four slopes, so four tests. So,

AlphaPrime = Alpha/Number of tests
= 0.1/4
= 0.025

Then our confidence level of the individual tests is 1 - AlphaPrime = 97.5%

b)

- The margin of error (ME) for an individual 95% confidence interval:

SEeast = 1.27815
qt((0.025/2), df = 20) = -2.085963

ME = -2.085963*1.27815
= -2.66174

- The ME for a Scheffe's 95% confidence interval:

SEeast = 1.27815
alpha' = 0.05/4 = 0.0125
qt((0.0125/2), df = 20) = -2.744376

ME = -2.744376*1.27815
= -3.507724

- The ME for a Scheffe's 95% confidence interval:

SEeast = 1.27815
qf(0.95, df1 = 5, df2 = 20) = 2.71089
sqrt(5*2.71089) = 3.681637

ME = 3.681637*1.27815
= 4.70568