Mth 656 Take Home final Fall 2012

Show your work!! Justify your answers!!

This is an open M256 book / M256 notes test, but you should NOT obtain any assistance from any person or the internet.

Note: You must detail how your results/answers are derived. Do NOT look in the back of the book for any answers.

1. Study the Optional Section 3.8: “some additional counting rules” in the textbook, and then work the following problem. The Advanced Problem in Sec 3.8, namely its problem 3.137 in 12th edition, while its problem 3.127 in 11th edition.
2. Recall Sec 5.6 on Exponential distributions, our discussion/class notes on chi-square distributions, and concepts of confidence intervals. It is known that for r.v. Y with an Exp(θ) distribution (θ , unknown), then [ (2/θ) (Y) ] has a chi-square distribution with 2 degrees of freedom. Suppose the observed value for Y is 3.8 , then construct a 95% confidence interval for θ.
3. Discuss in 12 lines or less and 2 pictures or less the ***geometric*** interpretation of Section 12.9’s Comparing Nested Models.