AMS 102.7 Homework #4

DUE: 3/15/2012

SHOW ALL WORK!!

There is a z-table in your book, or using google "z-table" will give you many options. Remember to make sure you are aware what type of z-table you are looking at (which area it is giving you)

1) An aptitude test is given to a group of students. The distribution of scores is believed to follow a Normal distribution with a mean of 150 and a Standard Deviation of 15.

    a) If a student gets a perfect score of 200, what is the Z-score associated with it?
    b) Based on the empirical rule, what two scores do the middle 68% of data fall between?
    c) What is the probability of a randomly selected student getting between 130 and 160?
    d) What is the IQR of this distribution (Recall: IQR = 75^{th} percentile – 25^{th} percentile)?

2) The amount of time it takes a dryer to completely dry a load of laundry is uniformly distributed between 25 and 35 minutes.

    a. What is the Probability that the laundry is dry within 28 minutes?
    b. Which has a greater probability of occurring: (Show your work)
        i. The laundry is dry between the 40^{th} percentile and 31 minutes.
        ii. The laundry takes longer than 32.5 minutes to dry.