Math 121 **Quiz #7** **Fall 2008**

p. 481: 69. (10 pts) The SAT scores of applicants to a certain university are normally distributed with a mean of 1170 and a standard deviation of 80. Let X represent the score of a randomly selected applicant.

(a) Compute the probability $P(1050 < X < 1250)$.

(b) Applicants whose SAT scores are in the upper 2.5% quality for a scholarship.

i. What percentile must an applicant's SAT score attain in order to qualify for a scholarship?

ii. What SAT score must an applicant attain in order to qualify for a scholarship?

p. 526: 4. Complete each of the following statements regarding the sampling distribution of the sample proportion of coffee drinkers in a simple random sample of size n adults from this population (select exactly one option in each part):

(a) As the sample size n increases, the standard deviation of the sampling distribution

i. decreases.

ii. increases.

iii. stays the same.

iv. not enough information to say for sure.

(b) As the sample size n increases, the mean of the sampling distribution

i. decreases.

ii. increases.

iii. stays the same.

iv. not enough information to say for sure.

(c) As the sample size n increases, the sampling distribution

i. looks more and more like the distribution from which the samples were drawn.

ii. looks more and more like a normal distribution.

iii. becomes more and more tightly clustered about its mean.

iv. both (ii) and (iii).

v. none of the above.