Math 3670 Practice Test 4

1a. Problem 5.3-39
b. Problem 5.4-50

2a. Problem 6-1-2
b. Problem 5.5-60

3a. A random sample with $n = 55$ was taken. The sample characteristics were $\bar{x} = 11.95$ and $s = 11.80$. Find the approximate 95% confidence interval for the the mean μ.
b. Let X equal the excess weight of soap in a 1000 gram bottle. Assume that the distribution of X is $N(\mu, 169)$. If a random sample of size 25 is taken and $\bar{x} = 36$. Find a 90% confidence interval for μ.

4a. Find constants so that $P(a \leq \dfrac{(n-1)S^2}{\sigma^2} \leq b) = .90$ where S^2 is the sample variance associated with a random sample of size $n = 25$ from a normal distribution.
b. If $\bar{s} = .2$ find a 90% confidence interval for σ. Describe the meaning of this confidence interval.