Problem 1. A population has a mean of 50 and a standard deviation of 6. What are the mean and standard deviation of the sampling distribution of the mean for $n = 16$?

Problem 2. Given a test that is normally distributed with mean $\mu = 100$ and a standard deviation of $\sigma = 12$, find the following:

(a) the probability that a single score drawn at random will be less than 120

(b) the probability that a single score drawn at random will be greater than 123

(c) the probability that a sample of 25 scores will have a mean less than 106

(d) the probability that the mean of a sample of 36 scores will be either less than 95 or greater than 105

(e) the test score such that the probability of scoring above it is 5%.