

**FINITE MATHEMATICS, EXAM 3, SPRING 1998, CAMILLO
SHOW ALL WORK FOR PROPER CREDIT.
THERE IS A STANDARD NORMAL CURVE TABLE ON THE BACK OF
THE TEST**

1.(20) A factory produces widgets. The mean weight of these widgets is 200 grams with a standard deviation of 10 grams. What fraction of these widgets have a weight that is greater than or equal to 212 grams or less than or equal to 188 grams? Assume a normal distribution.

2. (20) The incidence of a certain disease in a population is one percent. The test is positive in ninety-nine percent of the cases in which the disease is present, and positive in one percent of the cases in which the disease is not present:

a. If you test negative what is the probability that you don't have the disease?

b. If you test positive, what is the probability you do have the disease?

3.(15) A drawer contains two quarters and three dimes. If you with draw two coins without replacement what is the expected number of quarters you withdraw?

4.(15) You toss a fair coin five times, what is the probability that you get at least two heads?

5.(20) Urn one contains one red and three blue chips. Urn two contains four red and five blue chips. You chose an urn and then a chip:

a)What is the probability you chose a blue chip?

b)If you chose a blue chip what is the probability that it came from urn two?

6.(10) A certain test has a mean of seventy and a standard deviation of ten. Assuming a normal distribution, what is the minimum score you have to attain for your result on this test to be better than ninety percent of the scores? An answer within one or two points is acceptable.