110 WORKSHEET (8.2)

Name _____

1. Color blindness is an inherited characteristic that is dominant in males. Suppose it is known that in a group of 500 males and 500 females, the distribution of colorblindness is as follows:

	Color Blind	Not Color Blind
Male	21	479
Female	4	496

If a person is selected at random from the group, and if M represents male and C represents color blind, find the following probabilities:

A. $P(C)$

B. $P(C')$

C. $P(M \cap C)$

D. $P(M \cup C)$

E. $P(M' \cap C)$

F. $P(C' \cap M')$

G. $P(C \cup M')$

2. At a certain school, the probability that a student takes a course in mathematics is .56, the probability that a student takes a course in economics is .17, and the probability that a student takes a course in mathematics or economics is .58.

   A. Draw a Venn diagram for this problem.

   B. Find the probability that a student takes a course in both mathematics and economics.

   C. Find the probability that a student does not take an economics course.

3. A box of calculators contains 34 good and 16 defective calculators.

   A. If one calculator is selected at random, what is the probability that it is defective?

   B. If a sample of 4 calculators is selected , what is the probability that all 4 of them are defective?

   C. If a sample of 4 calculators are selected, what is the probability that exactly 3 of them are defective?

   D. If the box of 50 calculator with 16 defective is indicative of the overall quality, how many calculators would you expect to be defective from a production of 2000?