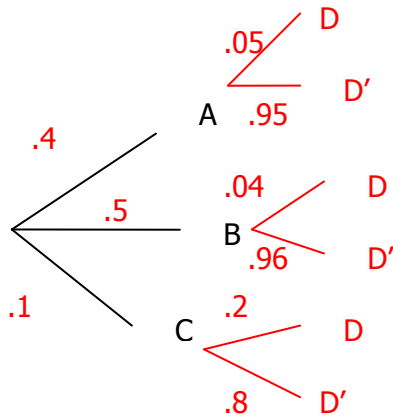MA 110 (8.4) **EXTRA WORKSHEET 1**

Name _____Solutions_____

A store sells three brands of CD players. Forty percents of the CD players they sell are manufactured by Amex, 50% are made by Bates and the remainder are made by Circo. The store has found that 5% of the CD players made by Amex are defective, 4% of the Bates CD players are defective, and 20% of the Circo CD players are defective.

A.   Draw a tree diagram with the given information. It is partially outlined for you.

B.   If it is **known that** a CD player is supplied by the Circo company, what is probability that the CD Player is not defective?

P(D'|C) = .8

C.   What is the probability that a CD player at the store comes from the Bates company?

P(B) = .5

D.   What is the probability that a CD player is both made by Bates **and** is defective?

P(B ∩ D) = .5(.04) = .02

E.   What is the probability that a CD player is defective?

P(D) = .4(.05) + .5(.04) + .1(.2) = .06

F.   If it is **known that** a CD player is defective, what is the probability that it came from the Bates company?

$$P(B|D) = \frac{P(B \cap D)}{P(D)} = \frac{.02}{.06} = \frac{2}{6} = \frac{1}{3} = .33$$