**5-22** Harley Davidson, director of quality control for the Kyoto Motor company, is conducting his monthly spot check of automatic transmissions. In this procedure, 10 transmissions are removed from the pool of components and are checked for manufacturing defects. Historically, only 2 percent of the transmissions have such flaws. (Assume that flaws occur independently in different transmissions.)

(a) What is the probability that Harley’s sample contains more than two transmissions with manufacturing flaws? (Do not use the tables.)

(b) What is the probability that none of the selected transmissions has any manufacturing flaws? (Do not use the tables.)

**5-23** Diane Bruns is the mayor of a large city. Lately, she has become concerned about the possibility that large numbers of people who are drawing unemployment checks are secretly employed. Her assistants estimate that 40 percent of unemployment beneficiaries fall into this category, but Ms. Bruns is not convinced. She asks one of her aides to conduct a quiet investigation of 10 randomly selected unemployment beneficiaries.

(a) If the mayor’s assistants are correct, what is the probability that more than eight of the

Individuals investigated have jobs? (Do not use the tables.)

(b) If the mayor’s assistants are correct, what is the probability that one or three of the investigated

Individuals have jobs? (Do not use the tables.)

**5-22 a. P(X>2) ?**

x7 = pbinom(2,10,0.02)

x8= 1-x7

x8 = 0.0008639063

**b. P(X=0)**

**x0=dbinom(0,10,0.02)**

**x0 =** 0.8170728

**5-22 a. P(X>8) ?**

**x7 = pbinom(8,10,0.4)**

**x8= 1-x7**

**x8 =** 0.001677722

**5-22 b. P(X=1) + P(X=3)?**

x0=dbinom(1,10,0.4)

x1=dbinom(3,10,0.4)

x3 = x0+x1

x3 = 0.2553016