Statistics 23, Section 1, Homework # 3

Due: Thursday, September 9, 1999

3.32 (a)-(d), (answers: 0.85, 0, 0, 0.7) 3.33 (a)-(c)

3.43, using Excel (note: already had numbers typed in from earlier problem 3.10)

3.47

B3: A company makes 40% of its cars at Factory A, and the rest at Factory B. Factory A produces 10% lemons, and Factory B produces 5% lemons. A car is chosen at random. What is the probability that:

(a) it came from Factory A? (0.4)
(b) it is a lemon, if it came from Factory A? (0.1)
(c) it is a lemon from Factory A? (0.04)
(d) it is a lemon? (0.07)
(e) It came from Factory A, it is a lemon? (4/7)

18.57

B4: The work force in a town has $\begin{pmatrix} 20\% \\ 50\% \\ 30\% \end{pmatrix}$ workers with $\begin{pmatrix} noHS \\ HS, noC \\ C \end{pmatrix}$ educations. Past experience indicates that $\begin{pmatrix} 10\% \\ 30\% \\ 90\% \end{pmatrix}$ of workers with $\begin{pmatrix} noHS \\ HS, noC \\ C \end{pmatrix}$ educations can perform a given task. Find the probability that a randomly chosen worker:

(a) can perform the task (0.44)
(b) is college educated, if (s)he can perform the task (0.614)

B5: Suppose events $A$, $B$, $C$ all have probability 0.4, $A$ and B are independent, and $A$ and $C$ are mutually exclusive.

(a) Find $P\{AorB\}$. (0.64)
(b) Find $P\{AorC\}$. (0.8)

3.32 (e), 3.33 (d), 3.39

3.42, using Excel (0.00603, 0.00217, 0.413, .360, no)

3.50, (0.988, 0.0117, 0.792, 0.118)