**Section 4  
1**.  At a college, 70 percent of the students are women and 45 percent of the students receive a grade of C. About 30 percent of the students are female, but not C students. Use this contingency table.

|  |  |  |  |
| --- | --- | --- | --- |
|  | C | Not C |  |
| Female |  | 0.30 | 0.70 |
| Male |  |  |  |
|  | 0.45 |  |  |

If a randomly selected student is male, what is the probability he is a C student?

**2.** The contingency table about customers of a store who buy cigars and/or beer is given below.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Beer | No Beer |  |
| Cigars |  | .05 |  |
| No cigar | .10 | .70 |  |
|  |  |  |  |

Determine the probability that a customer will buy at least one of these items: cigar or beer.

**3**.  Four employees who work as drive-through attendees at a local fast food restaurant are being evaluated. As a part of quality improvement initiative and employee evaluation these workers were observed over three days. One of the statistics collected is the proportion of time employee forgets to include a napkin in the bag. Related information is given in the table.

|  |  |  |
| --- | --- | --- |
| **Worker** | **Proportion of Dinners Packed** | **Proportion of forgetting Napkin when packing Dinner** |
| **Joe** | **0.25** | **0.06** |
| **Jan** | **0.20** | **0.02** |
| **Cheryl** | **0.20** | **0.10** |
| **Clay** | **0.35** | **0.04** |
|  |  |  |

You just purchased a dinner and found that there is no napkin in your bag, what is the probability that Jan has prepared your order?

**Section 5  
4**. In a study conducted for the State Department of Education, 30% of the teachers who left teaching did so because they were laid off. Assume that we randomly select 12 teachers who have recently left their profession. Find the probability that at least 4 of them were laid off.

**5**. The J.O. Supplies Company buys calculators from a Korean supplier. The probability of a defective calculator is 20%. If 15 calculators are selected at random, what is the probability that 5 or more of the calculators will be defective?

**6**. A door-to-door sales person for a Household appliance has learned from her past experience that out of twenty demonstrations of her appliance only seven result in actual sales (long run average). This week she needs to make at least four sales. At least how many demonstrations does she need to perform to ensure that the probability of meeting her target is at least 95 percent?

(**Read the chapter instruction posted by me to learn how to use Excel to find probabilities, and try to answer this question playing with cumulative probabilities-. You can also use Tables in the back of any Statistics book. Be careful about the wording of the question**)

**Section 6  
7**. If x is a binomial random variable where n = 100 and p = .1, find the probability that x is less than or equal to 12 **using the normal approximation to the binomial**.

**8**. The weight of a product is normally distributed with a standard deviation of .8 ounces. What should the average weight be if the production manager wants no more than 10% of the products to weigh more than 10 ounces?