Creating Two-Way Frequency Tables to Organize Information

1. Of the 100 students surveyed, 44 are male and 54 are in favor of a change to a 9-period, 4-day school week. Of those in favor, 20 are female.

   A.   What is the probability of randomly selecting a student who is against the proposal or is a female?

   B.   If a male is selected at random, what is the probability that he will be for the change?

2. Of the 400 doctors who attended a conference, 240 practiced family medicine and 130 were from countries outside the United States. One-third of the family medicine practitioners were not from the US.

   A.   What is the probability that a doctor practices family medicine or is from the US?
   B.   What is the probability that a doctor practices family medicine or is not from the US?
   C.   What is the probability that a doctor does not practice family medicine or is from the US?
   D.   What is the probability that a randomly selected person is not from the US, given that the person selected practices family medicine?
   E.   If a doctor selected at random is from the US, what is the probability that he/she practices family medicine?

3. There are 65 students going on a soccer trip.

   - 43 are players
   - 12 are left handed
   - 5 of the left handed students are soccer players

   A.   What is the probability that a student on the soccer trip is a soccer player or is left-handed?

   B.   If a player is selected at random, what is the probability that the player is not left-handed?

4. Of the 220 people who came into the Italian deli on Friday, 104 bought pizza and 82 used a credit card. Half of the people who bought pizza used a credit card.

A. What is the probability that a customer bought pizza or used a credit card?

B. What is the probability that a randomly selected customer bought pizza given that the customer selected used a credit card?

C. What is the probability that a randomly selected customer did not use a credit card given that the customer selected bought pizza?

D. If a randomly selected customer used a credit card, what is the probability that that person did not buy pizza?

5. A hairdresser keeps a record of all the customers she has had over the last month. Of the 100, customers, 80 were female. Her customers had either blonde or brunette hair. 55 customers had brunette hair. Of those 55, 15 were male.

A. What is the probability that a randomly selected customer was a male with blonde hair?

B. What is the probability that a randomly selected customer was a male or had blonde hair?

C. What is the probability that a randomly selected customer had blonde hair, given that the customer was male?

6. 3000 people were surveyed about their favorite movie genre. The participants had to give their age and choose their favorite genre from Action, Comedy, and Horror.   The survey is organized into three age groups of 1000 people each: 18-24 years old, 25-49 years old, and 50+ years old.

- Of the 1412 people who chose Comedy, 450 were 18-24 years old and 490 were 50+ years old.
- Of the 908 people who chose Action, 238 were 18-24 years old and 320 were 50+ years old.

A. What is the probability of choosing someone 50 or older whose favorite genre is horror?

B. If a 25-49 year old is chosen at random, what is the probability that that person's favorite genre is comedy?

C. What is the probability of randomly choosing someone who is either 18-24 years old or whose favorite genre is horror?