Lesson #24 · Topic 2E · Practice

Answer Key

1. a. No, the suit of a card is categorical.
   b. Yes, the number of tickets sold is quantitative and discrete (countable).
   c. Yes, the amount of money won is quantitative and discrete (countable).
   d. No, whether or not a flight is on time is categorical.

2. a. The distribution is skewed right with a single peak at 0 watches.
   b. $P(X \leq 2) = 0.9$
   c. $P(X = 1) = 0.3$. There is a 30% chance that a randomly selected student owns exactly one watch.

3. No. Although all probabilities are values between 0 and 1, the sum of the probabilities does not equal 1.

4. a. $P(C) = 0.10$
   b. The mean of C is 2.8. If many, many hours are randomly selected, the average number of commercials played per hour will be about 2.8.
   c. The standard deviation of C is 1.36. If many, many hours are randomly selected, the number of commercials played per hour will typically vary by about 1.36 commercials from the mean of 2.8 commercials.

5. a.

Money won	$\$50$	$\$30$	$\$20$	$\$0$
Probability	$\frac{1}{100}$	$\frac{1}{100}$	$\frac{1}{100}$	$\frac{97}{100}$

   b. Each winning amount does not have the same probability. Out of the 100 possible slips of paper, one slip is \$50, one slip is \$30, one slip is \$20, and the other 97 slips are \$0. There should be 97 zeros in the calculation of the average: $\frac{50 + 30 + 20 + 97(0)}{100}$.
   c. \$1

6. Since this is a uniform distribution, each value is equally weighted in the expected value calculation. The mean of 1, 2, 3, 4, and 5 also equally weights each of the values in the calculation.

7. D

8. D