

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.****Solve the problem. Round your answer, as needed.**

- 1) A study conducted at a certain college shows that 75% of the school's graduates find a job in their chosen field within a year after graduation. Find the probability that 5 randomly selected graduates all find jobs in their chosen field within a year of graduating. 1) \_\_\_\_\_  
A) 0.0667                      B) 3.7500                      C) 0.3750                      D) 0.2373
- 2) In a business class, 25% of the students have never taken a statistics class, 55% have taken only one semester of statistics, and the rest have taken two or more semesters of statistics. The professor randomly assigns students to groups of three to work on a project for the course. What is the probability that neither of your two group mates has studied statistics? 2) \_\_\_\_\_  
A) 0.25                      B) 0.50                      C) 0.75                      D) 0.20                      E) 0.063
- 3) The date is March 9, and there are 108 people in a room. What is the probability that at least one of them has a birthday today? 3) \_\_\_\_\_  
A) 0.744                      B) 0.296                      C) 0.256                      D) 0.742                      E) 0.258
- 4) Opinion-polling organizations contact their respondents by sampling random telephone numbers. Assume that interviewers can now reach about 77% of U.S. households, while the percentage of those contacted who agree to cooperate with the survey is 32%. Each household, of course, is independent of the others. What is the probability of failing to contact a household or of contacting the household but not getting them to agree to the interview? 4) \_\_\_\_\_  
A) 0.476                      B) 0.407                      C) 0.156                      D) 0.754                      E) 0.844
- 5) You roll a fair die three times. What is the probability that you roll at least one 2? 5) \_\_\_\_\_  
A) 0.167                      B) 0.579                      C) 0.005                      D) 0.5                      E) 0.421
- 6) You roll a fair die three times. What is the probability that you roll all 2's? 6) \_\_\_\_\_  
A) 0.167                      B) 0.005                      C) 0.333                      D) 1.5                      E) 0.5
- 7) Opinion-polling organizations contact their respondents by sampling random telephone numbers. Assume that interviewers can now reach about 77% of U.S. households, while the percentage of those contacted who agree to cooperate with the survey is 35%. Each household, of course, is independent of the others. What is the probability that the next household on the list will be contacted but will refuse to cooperate? 7) \_\_\_\_\_  
A) 0.150                      B) 0.081                      C) 0.270                      D) 0.501                      E) 0.177
- 8) The American Red Cross says that about 45% of the U.S. population has Type O blood, 40% Type A, 11% Type B, and the rest Type AB. Among five donors, what is the probability that no one is Type AB? 8) \_\_\_\_\_  
A) 0.000                      B) 0.048                      C) 0.200                      D) 0.815                      E) 4.800

- 9) In a business class, 35% of the students have never taken a statistics class, 25% have taken only one semester of statistics, and the rest have taken two or more semesters of statistics. The professor randomly assigns students to groups of three to work on a project for the course. What is the probability that both of your two group mates have studied at least one semester of statistics? 9) \_\_\_\_\_
- A) 0.25                      B) 0.423                      C) 1.3                      D) 0.063                      E) 0.65
- 10) There is a huge pile of buttons in which 29% are black, 11% are blue, 17% are orange, 24% are white, and the rest are clear. You close your eyes, choose a button at random, write down what color it is, and then put it back in the pile. What is the probability that the third button you choose is the first one that's clear? 10) \_\_\_\_\_
- A) 0.157                      B) 0.125                      C) 0.029                      D) 0.007                      E) 0.531

**Determine whether the events are disjoint, independent, neither, or both.**

- 11) In filling out a ballot for president, the events of voting for the Democratic candidate and voting for the Republican candidate 11) \_\_\_\_\_
- A) Disjoint                      B) Independent                      C) Neither                      D) Both
- 12) In rolling a fair die twice, the events of getting a 2 on the first roll and a 4 on the second 12) \_\_\_\_\_
- A) Disjoint                      B) Independent                      C) Neither                      D) Both
- 13) In driving a car, the events of driving over the speed limit and getting a speeding ticket 13) \_\_\_\_\_
- A) Disjoint                      B) Independent                      C) Neither                      D) Both
- 14) In rolling a fair die once, the events of getting a 3 and getting a 5 14) \_\_\_\_\_
- A) Disjoint                      B) Independent                      C) Neither                      D) Both

**Choose the best answer.**

- 15) A random spinner can land on red, green, blue, or yellow. If on the first three spins it lands once each on red, green, and yellow, is it more likely to land on blue on the fourth spin? 15) \_\_\_\_\_
- A) No, because knowing one outcome will not affect the next.  
 B) Yes, because every color is equally likely to occur.  
 C) No, because the spins are disjoint events.  
 D) Yes, because the spinner shows randomness, not chaos.  
 E) Yes, because the Something Has to Happen Rule dictates that all outcomes should occur.
- 16) The Multiplication Rule says that  $P(A \text{ and } B) = P(A) \times P(B)$ . What must be true about events A and B for this rule to apply? 16) \_\_\_\_\_
- A) The events must be disjoint.  
 B) The events must be independent.  
 C) The events must be mutually exclusive.  
 D) Two of the above  
 E) All of the above



## Answer Key

Testname: SAMPLE EXERCISES CHAPTER 14

- 1) D
- 2) E
- 3) C
- 4) D
- 5) E
- 6) B
- 7) D
- 8) D
- 9) B
- 10) B
- 11) A
- 12) B
- 13) C
- 14) A
- 15) A
- 16) B
- 17) E
- 18) B
- 19) B
- 20) C
- 21) A