

5. Identifying Probability Values Which of the following values are *not* probabilities?

5:2 $3/7$ $7/3$ -0.9 0.123 $123/456$ $456/123$ 0 1

6. U.S. President “Who was the 14th president of the United States: Taylor, Fillmore, Pierce, or Buchanan?” If you make a random guess for the answer to that question, what is the probability that your answer is the correct answer of Pierce?

7. Digits of Pi “Which of the following is the mean of the first 100 digits of pi after the decimal point: 4.4, 4.5, 4.6, 4.7, or 4.8?” If you make a random guess for the answer to that question, what is the probability that your answer is the correct answer of 4.8?

8. The Die Is Cast When rolling a single die, what is the probability that the outcome is 7?

In Exercises 9–12, assume that 400 births are randomly selected. Use subjective judgment to determine whether the given outcome is unlikely, and also determine whether it is unusual in the sense that the result is far from what is typically expected.

9. Exactly 205 girls. 10. Exactly 380 girls.

11. Exactly 111 girls. 12. Exactly 197 girls.

In Exercises 13–20, express the indicated degree of likelihood as a probability value between 0 and 1.

13. Traffic Light When arriving at the traffic light closest to the author’s home, there is a 25% chance that the light will be red.

14. Weather While this exercise was being created, Weather.com indicated that there is a 20% chance of rain for the author’s home region.

15. Testing If you make a random guess for the answer to a true/false test question, there is a 50–50 chance of being correct.

16. Pierced Ears Based on a Harris poll, there is a 50–50 chance that a randomly selected adult has pierced ears.

17. SAT Test When guessing the answer to a multiple-choice question on an SAT test, the chance of guessing correctly is 1 in 5.

18. Dice When rolling a pair of dice at the Bellagio Casino in Las Vegas, there is 1 chance in 36 that the outcome is a 12.

19. Statistics Test It is impossible to pass a statistics test without studying.

20. Death and Taxes Benjamin Franklin said that death is a certainty of life.



In Exercises 21–24, refer to the sample data in Table 4-1, which is included with the Chapter Problem. Assume that one of the subjects included in Table 4-1 is randomly selected.

21. Pre-Employment Drug Screening Find the probability of selecting someone who got a result that is a false negative. Who would suffer from a false negative result? Why?

22. Pre-Employment Drug Screening Find the probability of selecting someone who got a result that is a false positive. Who would suffer from a false positive result? Why?

23. Pre-Employment Drug Screening Find the probability of selecting someone who uses drugs. Is the result close to the probability of 0.134 for a positive test result?

24. Pre-Employment Drug Screening Find the probability of selecting someone who does not use drugs. Is the result close to the probability of 0.866 for a negative test result?