

# Practice 1-6

Probability

1. You select a number at random from the sample space {1, 2, 3, 4, 5}. Find each theoretical probability.
 

a. $P(\text{the number is } 2)$	b. $P(\text{the number is even})$
c. $P(\text{the number is prime})$	d. $P(\text{the number is less than } 5)$
  
2. In a class of 19 students, 10 study Spanish, 7 study French, and 2 study both French and Spanish. One student is picked at random. Find each probability.
 

a. $P(\text{studying Spanish but not French})$	b. $P(\text{studying neither Spanish nor French})$
c. $P(\text{studying both Spanish and French})$	d. $P(\text{studying French})$
  
3. In a telephone survey of 150 households, 75 respondents answered “Yes” to a particular question, 50 answered “No,” and 25 were “Not sure.” Find each experimental probability.
 

a. $P(\text{answer was “Yes”})$	b. $P(\text{answer was “No”})$
c. $P(\text{answer was “Not sure”})$	d. $P(\text{answer was not “Not sure”})$
  
4. A wallet contains four bills with denominations of \$1, \$5, \$10, and \$20. You choose two of the four bills from the wallet at random and add the dollar amounts.
  - a. What is the sample space? How many outcomes are there?
  - b. What is the probability of getting \$15?
  - c. What is the probability of getting \$50?
  - d. What is the probability of getting at least \$25?
  
5. A basketball player has attempted 24 shots and made 13. Find the experimental probability that the player will make the next shot that she attempts.
  
6. A baseball player attempted to steal a base 70 times and was successful 47 times. Find the experimental probability that the player will be successful on his next attempt to steal a base.

**For Exercises 7–8, define a simulation by telling how you represent correct answers, incorrect answers, and the quiz. Use your simulation to find each experimental probability.**

7. If you guess the answers at random, what is the probability of getting at least three correct answers on a four-question true-false quiz?
  
8. A five-question multiple-choice quiz has four choices for each answer. If you guess the answers at random, what is the probability of getting at least four correct answers?
  
9. A circular pool of radius 12 ft is enclosed within a rectangular yard measuring 50 ft by 100 ft. If a ball from an adjacent golf course lands at a random point within the yard, what is the probability that the ball lands in the pool?
  
10. Five people each flip a coin. What is the theoretical probability that all five will get heads?

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