

**Practice 1-6****Probability**

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- You select a number at random from the sample space {1, 2, 3, 4, 5}. Find each theoretical probability.
    - $P(\text{the number is } 2)$
    - $P(\text{the number is even})$
    - $P(\text{the number is prime})$
    - $P(\text{the number is less than } 5)$
  - 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.
    - $P(\text{studying Spanish but not French})$
    - $P(\text{studying neither Spanish nor French})$
    - $P(\text{studying both Spanish and French})$
    - $P(\text{studying French})$
  - 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.
    - $P(\text{answer was "Yes"})$
    - $P(\text{answer was "No"})$
    - $P(\text{answer was "Not sure"})$
    - $P(\text{answer was not "Not sure"})$
  - 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.
    - What is the sample space? How many outcomes are there?
    - What is the probability of getting \$15?
    - What is the probability of getting \$50?
    - What is the probability of getting at least \$25?
  - 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.
  - 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.**

- 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?
- 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?
- 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?
- Five people each flip a coin. What is the theoretical probability that all five will get heads?