

9-1 Introduction to Probability



Suppose two dice are rolled, one white and one blue. Figure 9-1a shows the 36 possible outcomes.

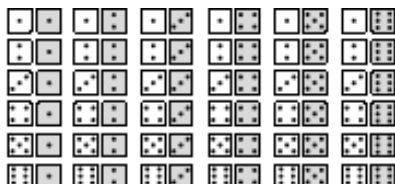
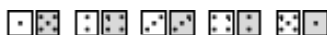


Figure 9-1a

There are five outcomes for which the total on the dice is 6:



Because each outcome is equally likely, you would expect that in many rolls of the dice, the total would be 6 roughly $\frac{5}{36}$ of the time. This number, $\frac{5}{36}$, is called the **probability** of rolling a 6. In this section you will find the probabilities of other events in the dice-rolling experiment.

OBJECTIVE Find the probability of various events in a dice-rolling experiment.

Exploratory Problem Set 9-1

Two dice are rolled, one white and one blue. Find the probability of each of these events.

1. The total is 10.
2. The total is at least 10.
3. The total is less than 10.
4. The total is at most 10.
5. The total is 7.
6. The total is 2.
7. The total is between 3 and 7, inclusive.
8. The total is between, but does not include, 3 and 7.
9. The total is between 2 and 12, inclusive.
10. The total is 13.
11. The numbers are 2 and 5.
12. The blue die shows 2 and the white die shows 5.
13. The blue die shows 2 or the white die shows 5.