

Determine the sample space.

- 1. A coin and a six-sided die are tossed.
 $H-1 \quad H-3 \quad H-5 \quad T-1 \quad T-3 \quad T-5$
 $H-2 \quad H-4 \quad H-6 \quad T-2 \quad T-4 \quad T-6$

- 2. A six-sided die is tossed twice and the sum of the points is recorded.
 $\{2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$

- 3. A taste tester has to rank three varieties of yogurt, A, B, and C, according to preference.
 $ABC \quad BCA \quad CBA$
 $ACB \quad BAC \quad CAB$

- 4. Two marbles are selected from a sack containing two red marbles, two blue marbles, and one black marble. The color of each marble is recorded.
 20 possibilities $R_1 R_2 \quad R_1 B_2 \quad \text{etc.}$
 $R_1 B_1 \quad R_1 BLK$

- 5. Two county supervisors are selected from five supervisors, A, B, C, D, and E, to study a recycling plan.
 $AB \quad \dots \quad CA \quad \dots \quad EA$
 $AC \quad \dots \quad CB \quad \dots \quad EB$
 $AD \quad \dots \quad CD \quad \dots \quad EC$
 $AE \quad \dots \quad CE \quad \dots \quad ED$

- 6. A sales representative makes a presentation about a product in three homes per day. In each home there may be a sale (denote by S) or there may be no sale (denote by F).
 $SSS \quad SFS \quad SFF \quad FFS$
 $SFF \quad FSS \quad FSF \quad FFF$

Heads or Tails In exercises 7 – 10 find the probability in the experiment of tossing a coin three times. Use the sample space $S = \{HHH, HHT, HTH, HTT, THH, THT, TTH, TTT\}$.

- 7. The probability of getting exactly one tail.
 $3/8$

- 8. The probability of getting a head on the first toss.
 $1/2$

- 9. The probability of getting at least one head.
 $7/8$

- 10. The probability of getting at least two heads.
 $1/2$

Drawing a Card In exercises 11 – 14, find the probability in the experiment of selecting one card from a standard deck of 52 playing cards.

- 11. The card is a face card.
 $3/13$

- 12. The card is not a face card.
 $10/13$

- 13. The card is a red face card.
 $3/26$

- 14. The card is a 6 or less.
 $6/13$

Tossing a Die In exercises 15 – 20, find the probability in the experiment of tossing a six-sided die twice.

15. The sum is 4.

$$\frac{1}{12}$$

16. The sum is at least 7.

$$\frac{7}{12}$$

17. The sum is less than 11.

$$\frac{11}{12}$$

18. The sum is 2, 3, or 12.

$$\frac{1}{4}$$

19. The sum is odd or no more than 7.

$$\frac{3}{4}$$

20. The sum is odd or prime.

$$\frac{19}{36}$$

In exercises 21 and 22, you are given the probability that an event will happen. Find the probability that the event will not happen.

21. $p = 0.7$.3

22. $p = 0.36$.64

In exercises 23 and 24, you are given the probability that an event will not happen. Find the probability that the event will happen.

23. $p = 0.15$

$$.85$$

24. $p = 0.84$

$$.16$$