Chapter - 15

Probability

Question 1: Probability is defined as:

A) The study of random events

B) The likelihood of an event occurring

C) The study of statistics

D) The analysis of data patterns

Answer: B) The likelihood of an event occurring

Question 2: The probability of an impossible event is:

A) 0

B) 1

C) 0.5

D) Cannot be determined

Answer: A) 0

Question 3: The sum of the probabilities of all possible outcomes of an experiment is always:

A) 0

B) 1

C) 0.5

D) Cannot be determined

Answer: B) 1

Question 4: The probability of an event that is certain to happen is:

A) 0

B) 1

C) 0.5

D) Cannot be determined

Answer: B) 1

Question 5: The probability of an event that cannot occur is:

A) 0

B) 1

C) 0.5

D) Cannot be determined

Answer: A) 0

Question 6: The probability of an event that is equally likely to occur or not occur is:

A) 0

B) 1

C) 0.5

D) Cannot be determined

Answer: C) 0.5

Question 7: The probability of an event that is mutually exclusive with another event is:

A) The sum of their probabilities

B) The difference between their probabilities

C) The product of their probabilities

D) Cannot be determined

Answer: A) The sum of their probabilities

Question 8: Two dice are rolled. What is the probability of getting a sum of 7?

A) 1/6

B) 1/12

C) 1/36

D) 1/2

Answer: A) 1/6

Question 9: A deck of cards contains 52 cards. What is the probability of drawing a spade?

A) 1/13

B) 1/26

C) 1/52

D) 1/4

Answer: A) 1/13

Question 10: A bag contains 6 red balls and 4 green balls. What is the probability of drawing a red ball?

A) 1/2

B) 3/5

C) 6/10

D) 4/10

Answer: C) 6/10

Question 11: What is the probability of getting a tail when tossing a fair coin?

A) 0

B) 1/2

C) 1

D) 2

Answer: B) 1/2

Question 12: A box contains 5 red balls, 3 green balls, and 2 blue balls. What is the probability of drawing a green ball?

A) 3/10

B) 1/5

C) 3/8

D) 2/5

Answer: A) 3/10

Question 13: Two dice are rolled. What is the probability of getting a sum greater than 9?

A) 1/12

B) 1/6

C) 1/3

D) 1/2

Answer: C) 1/3

Question 14: In a deck of cards, what is the probability of drawing a face card (jack, queen, or king)?

A) 1/4

B) 1/13

C) 3/13

D) 3/4

Answer: C) 3/13

Question 15: A bag contains 5 red marbles, 3 blue marbles, and 2 green marbles. If one marble is drawn at random, what is the probability of getting a blue marble?

A) 3/10

B) 1/5

C) 3/5

D) 1/2

Answer: B) 1/5

Question 16: If two cards are drawn from a deck without replacement, what is the probability of drawing two aces?

A) 1/13

B) 1/26

C) 1/169

D) 1/221

Answer: C) 1/169

Question 17: An experiment has 4 equally likely outcomes. What is the probability of each individual outcome?

A) 0

B) 1/4

C) 1/2

D) 1

Answer: B) 1/4

Question 18: A bag contains 10 white balls, 8 red balls, and 6 blue balls. If one ball is drawn at random, what is the probability of not getting a red ball?

A) 1/4

B) 3/4

C) 1/3

D) 2/3

Answer: D) 2/3

Question 19: In a class, there are 15 boys and 10 girls. If a student is selected at random, what is the probability of selecting a boy?

A) 3/5

B) 2/5

C) 15/25

D) 10/25

Answer: A) 3/5

Question 20: If the probability of an event A is 0.3 and the probability of its complement A' is 0.7, then the event A is:

A) Certain

B) Impossible

C) Equally likely

D) Not enough information provided

Answer: C) Equally likely

Question 21: A deck of cards contains 52 cards, including 4 aces. What is the probability of drawing an ace?

A) 1/13

B) 1/26

C) 1/52

D) 4/52

Answer: D) 4/52

Question 22: Two dice are rolled. What is the probability of getting a sum of 6?

A) 1/6

B) 1/12

C) 5/36

D) 1/3

Answer: C) 5/36

Question 23: A bag contains 8 red balls and 5 blue balls. If one ball is drawn at random, what is the probability of drawing a blue ball?

A) 5/13

B) 3/13

C) 5/8

D) 3/8

Answer: B) 3/13

Question 24: The probability of an event E occurring is 0.3. What is the probability of the complement of E?

A) 0.7

B) 1.0

C) 0.3

D) 0.0

Answer: A) 0.7

Question 25: In a class, there are 25 students. If a student is selected at random, what is the probability of selecting a girl if there are 12 girls and 13 boys?

A) 12/25

B) 13/25

C) 25/12

D) 25/13

Answer: A) 12/25

Question 26: A bag contains 6 black balls, 4 white balls, and 2 green balls. If one ball is drawn at random, what is the probability of getting a white ball?

A) 1/3

B) 2/3

C) 4/12

D) 4/6

Answer: C) 4/12

Question 27: If the probability of an event A is 0.6 and the probability of an event B is 0.4, what is the probability of both A and B occurring?

A) 0.2

B) 0.24

C) 0.6

D) 0.04

Answer: B) 0.24

Question 28: In a pack of 52 playing cards, what is the probability of drawing a heart or a diamond?

A) 1/4

B) 1/2

C) 3/4

D) 1/3

Answer: C) 3/4

Question 29: A bag contains 8 red marbles, 5 blue marbles, and 7 green marbles. If one marble is drawn at random, what is the probability of not getting a blue marble?

A) 5/20

B) 15/20

C) 8/20

D) 12/20

Answer: B) 15/20

Question 30: A coin is tossed 3 times. What is the probability of getting exactly 2 heads?

A) 1/2

B) 1/3

C) 1/4

D) 1/8

Answer: D) 1/8

Question 31: A bag contains 5 red balls, 3 green balls, and 2 blue balls. If two balls are drawn at random without replacement, what is the probability that both balls are red?

A) 1/20

B) 1/10

C) 1/15

D) 1/6

Answer: B) 1/10

Question 32: A dice is rolled. What is the probability of getting a number less than 4?

A) 1/6

B) 1/2

C) 1/3

D) 2/3

Answer: C) 1/3

Question 33: A bag contains 10 black balls and 6 white balls. If two balls are drawn at random with replacement, what is the probability that both balls are black?

A) 1/4

B) 1/3

C) 5/8

D) 25/64

Answer: D) 25/64

Question 34: Two cards are drawn successively from a well-shuffled deck of 52 playing cards. What is the probability that the first card is a king and the second card is a queen?

A) 1/52

B) 1/169

C) 1/26

D) 1/221

Answer: D) 1/221

Question 35: In a group of 30 students, 18 like chocolate and 12 like vanilla. If a student is selected at random, what is the probability that the student likes chocolate or vanilla?

A) 5/9

B) 2/5

C) 3/5

D) 7/15

Answer: A) 5/9

Question 36: A bag contains 8 red balls, 6 blue balls, and 4 green balls. If one ball is drawn at random, what is the probability of getting a red or blue ball?

A) 7/18

B) 7/9

C) 1/3

D) 5/9

Answer: B) 7/9

Question 37: The probability of an event is always:

A) Less than 1

B) Greater than 1

C) Between 0 and 1

D) Either 0 or 1

Answer: C) Between 0 and 1

Question 38: A bag contains 6 red balls and 4 green balls. If two balls are drawn at random with replacement, what is the probability that both balls are green?

A) 1/10

B) 1/15

C) 1/25

D) 1/36

Answer: D) 1/36

Question 39: If the probability of an event A is 0.2 and the probability of its complement A' is 0.8, then the event A is:

A) Certain

B) Impossible

C) Equally likely

D) Not enough information provided

Answer: A) Certain

Question 40: A box contains 8 red balls and 7 blue balls. If three balls are drawn at random without replacement, what is the probability that exactly two balls are red?

A) 35/99

B) 28/99

C) 2/15

D) 2/9

Answer: B) 28/99

Question 41: A bag contains 5 red balls, 4 green balls, and 3 blue balls. If three balls are drawn at random without replacement, what is the probability that all three balls are green?

A) 1/22

B) 1/33

C) 1/44

D) 1/55

Answer: C) 1/44

Question 42: A fair six-sided die is rolled. What is the probability of getting a number less than 5?

A) 1/6

B) 1/3

C) 2/3

D) 5/6

Answer: C) 2/3

Question 43: A bag contains 7 red balls, 4 green balls, and 5 blue balls. If two balls are drawn at random without replacement, what is the probability that both balls are red?

A) 7/51

B) 7/48

C) 1/51

D) 1/48

Answer: A) 7/51

Question 44: In a class, there are 30 students. If two students are selected at random, what is the probability that both students are boys if there are 15 boys and 15 girls?

A) 1/2

B) 1/3

C) 1/4

D) 1/5

Answer: C) 1/4

Question 45: A bag contains 6 black balls, 5 white balls, and 4 red balls. If one ball is drawn at random, what is the probability of not getting a black ball?

A) 5/15

B) 9/15

C) 11/15

D) 15/16

Answer: C) 11/15

Question 46: Two cards are drawn successively from a well-shuffled deck of 52 playing cards. What is the probability that the first card is a red card and the second card is a black card?

A) 1/2

B) 1/4

C) 26/51

D) 25/51

Answer: C) 26/51

Question 47: A box contains 10 white balls and 8 black balls. If three balls are drawn at random without replacement, what is the probability that all three balls are black?

A) 14/243

B) 7/81

C) 2/27

D) 1/8

Answer: B) 7/81

Question 48: A fair coin is tossed 4 times. What is the probability of getting exactly 2 heads?

A) 1/4

B) 3/8

C) 1/2

D) 5/8

Answer: B) 3/8

Question 49: A bag contains 5 red marbles, 4 blue marbles, and 6 green marbles. If two marbles are drawn at random without replacement, what is the probability that both marbles are blue?

A) 2/45

B) 4/45

C) 4/55

D) 2/55

Answer: A) 2/45

Question 50: A box contains 10 pens, out of which 4 are defective. If 2 pens are drawn at random without replacement, what is the probability that both pens are not defective?

A) 3/5

B) 7/15

C) 6/15

D) 2/5

Answer: B) 7/15