

Learnzy Academy

Worksheet: Probability

1. Two dice are thrown at the same time. Determine the probability that the difference of the numbers on the two dice is 2.
2. A box contains 5 red marbles, 8 white marbles and 4 green marbles. One marble is taken out of the box at random. What is the probability that the marble taken out will be (i) red ? (ii) white ? (iii) not green?
3. Two dice are thrown together. Find the probability that the product of the numbers on the top of the dice is (i) 6 (ii) 12 (iii) 7
4. It is given that in a group of 3 students, the probability of 2 students not having the same birthday is 0.992. What is the probability that the 2 students have the same birthday?
5. One card is drawn from a well-shuffled deck of 52 cards. Find the probability of getting (i) a king of red colour (ii) a face card (iii) a red face card (iv) the jack of hearts (v) a spade (vi) the queen of diamonds
6. A coin is tossed 3 times. List the possible outcomes. Find the probability of getting (i) all heads (ii) at least 2 heads
7. A lot consists of 144 ball pens of which 20 are defective and the others are good. Nuri will buy a pen if it is good, but will not buy if it is defective. The shopkeeper draws one pen at random and gives it to her. What is the probability that (i) She will buy it ? (ii) She will not buy it ?
8. A piggy bank contains hundred 50p coins, fifty $\text{₹}1$ coins, twenty $\text{₹}2$ coins and ten $\text{₹}5$ coins. If it is equally likely that one of the coins will fall out when the bank is turned upside down, what is the probability that the coin: (i) will be a 50p coin? (ii) will not be a $\text{₹}5$ coin?
9. Which of the following cannot be the probability of an event? (A) $\frac{2}{3}$ (B) -1.5 (C) 15% (D) 0.7
10. A die is thrown once. Find the probability of getting (i) a prime number; (ii) a number lying between 2 and 6; (iii) an odd number
11. 12 defective pens are accidentally mixed with 132 good ones. It is not possible to just look at a pen and tell whether or not it is defective. One pen is taken out at random from this lot. Determine the probability that the pen taken out is a good one.
12. The probability that it will rain today is 0.84. What is the probability that it will not rain today?
13. A box contains 90 discs which are numbered from 1 to 90. If one disc is drawn at random from the box, find the probability that it bears (i) a two-digit number (ii) a perfect square number (iii) a number divisible by 5.

- 14.** A game of chance consists of spinning an arrow which comes to rest pointing at one of the numbers 1, 2, 3, 4, 5, 6, 7, 8, and these are equally likely outcomes. What is the probability that it will point at (i) 8 ? (ii) an odd number? (iii) a number greater than 2? (iv) a number less than 9?
- 15.** Complete the following statements: (i) Probability of an event E + Probability of the event 'not E' = _____. (ii) The probability of an event that cannot happen is _____. Such an event is called _____. (iii) The probability of an event that is certain to happen is _____. Such an event is called _____. (iv) The sum of the probabilities of all the elementary events of an experiment is _____. (v) The probability of an event is greater than or equal to _____ and less than or equal to _____.
- 16.** (i) A lot of 20 bulbs contain 4 defective ones. One bulb is drawn at random from the lot. What is the probability that this bulb is defective? (ii) Suppose the bulb drawn in (i) is not defective and is not replaced. Now one bulb is drawn at random from the rest. What is the probability that this bulb is not defective ?
- 17.** A coin is tossed two times. Find the probability of getting at most one head.
- 18.** Why is tossing a coin considered to be a fair way of deciding which team should get the ball at the beginning of a football game?
- 19.** A die is thrown twice. What is the probability that (i) 5 will not come up either time? (ii) 5 will come up at least once?
- 20.** Which of the following arguments are correct and which are not correct? Give reasons for your answer. (i) If two coins are tossed simultaneously, there are three possible outcomes—two heads, two tails or one of each. Therefore, for each of these outcomes, the probability is $\frac{1}{3}$. (ii) If a die is thrown, there are two possible outcomes—an odd number or an even number. Therefore, the probability of getting an odd number is $\frac{1}{2}$.