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Worksheet: Probability

1. 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?
2. 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
3. The record of a weather station shows that out of the past 250 consecutive days, its weather forecasts were correct 175 times. (i) What is the probability that on a given day it was correct? (ii) What is the probability that it was not correct on a given day?
4. A piggy bank contains hundred 50p coins, fifty ■1 coins, twenty ■2 coins and ten ■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 ■5 coin?
5. Out of 400 bulbs in a box, 15 bulbs are defective. One bulb is taken out at random from the box. Find the probability that the drawn bulb is not defective.
6. A bag contains lemon flavoured candies only. Malini takes out one candy without looking into the bag. What is the probability that she takes out (i) an orange flavoured candy? (ii) a lemon flavoured candy?
7. 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
8. 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 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 1/2.
9. (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 ?
10. 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.

11. 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 _____.

12. In a lottery there are 10 prizes and 25 blanks. What is the probability of getting a prize?

13. If P(E) = 0.05, what is the probability of ‘not E’?

14. The probability that it will rain today is 0.84. What is the probability that it will not rain today?

15. Two dice are thrown at the same time and the product of numbers appearing on them is noted. Find the probability that the product is less than 9.

16. Which of the following experiments have equally likely outcomes? Explain. (i) A driver attempts to start a car. The car starts or does not start. (ii) A player attempts to shoot a basketball. She/he shoots or misses the shot. (iii) A trial is made to answer a true-false question. The answer is right or wrong. (iv) A baby is born. It is a boy or a girl

17. What is the probability that an ordinary year has 53 Sundays?

18. 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 ?

19. A bag contains 3 red balls and 5 black balls. A ball is drawn at random from the bag. What is the probability that the ball drawn is (i) red ? (ii) not red?

20. 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?