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|  | **2022-2023 EDUCATIONAL YEAR**  **9th CLASS**  **MATHEMATICS** |

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| **Date : 29/ 11 /2022** | **Worksheet No:** |
| **Name- Surname:** | **Class:** |
| **Unit: Probability** | |
| **Subject:** | |

1. A coin is tossed. What is the probability of obtaining a tail?

S = {h,t}

E = {t}

S = 2

E = 1

P(tail) 0.50

2. I roll a die. What is the probability that the number rolled is odd?

S = {1,2,3,4,5,6}

E = {1,3,5}

S = 6

E = 3

P(odd) 0.50

3. A coin is tossed three times. What is the probability of getting only one head?

S = {{h,h,h},{h,h,t},{h,t,t},{t,t,t}}

E = {{h,t,t}}

S = 4

E = 1

P(h) 0.25

4. The integers 1 through 15 are written on separate cards. You are asked to pick a card at random. What is the probability that you pick a prime number?

S = {1,2,3,4,5,67,8,9,10,11,12,13,14,15}

E = {2,3,5,7,11,13}

S = 15

E = 6

P(prime) 0.4

5. A student rolls a die. What is the probability of;

a) The number rolled is less than 8

S = {1,2,3,4,5,6}

E = {1,2,3,4,5,6}

S = 6

E = 6

P(odd) 1.0

b) The number rolled is 9

S = {1,2,3,4,5,6}

E = {}

S = 6

E = 0

P(odd) 0.0

6. In a game a player bets on a number from 2 to 12 and rolls two dice. If the sum of the spots on the dice is the number he guessed, he wins the game. Which number would you advise the player to bet on? Why?

7. A die is rolled. Find the probability that is shows 3 or 5.

8. A die is rolled. Find the probability that it shows an even number or a prime number.

9. We have twenty cards numbered from 1 to 20. A card is drawn at random. What is the probability of drawing an even number or a number divisible by 3?

10. A coin is tossed four times. What is the probability that a coin shows tails at least once?

11. It was found that out of the 80 students in grade 10, 60 passed the mathematics test while 50 passed both the mathematics and science tests.

If a student is chosen at random, what is the probability he/she passed the science test given he/she also passed the mathematics test

12. At Greenside International School its known that 55% of students own a surfboard and that 30% own a surfboard and a skateboard

Find the probability of a student chosen at random owning a skateboard, given that he she owns a surfboard.

13. A bag contains 4 yellow marbles and 6 red marbles. Two marbles are drawn at random from the box. What is the probability that both marbles are yellow?

14. A coin is tossed eight times. What is the probability of getting 5 heads and 3 tails?

15. In a group of 13 people, 4 people speak English, 6 people speak Turkish and 3 people speak Germen. A committee of 5 people is chosen at random from the group. What is the probability that the committee contains 2 English speakers, 2 Turkish speakers and one German speaker?

16. A student is taking a test which has 15 true or false questions. If the students guess every answer, what is the probability that he or she will answer exactly eleven questions correctly?

17. A number is selected at random from the three digit numbers formed using the digits {1,2,3,4,5,6,7} without repetition. Find the probability that the selected number is an even number.

18. Six people including Ece and Ege are to be seated around a circular table. Find the probability that Ece and Ege are seated next to each other.

19)

The spinner shown here is spun and the score on the side on which it lands is recorded.

What is the probability that the score is?

1. a) 2
2. b) Odd
3. c) Less than 5

20)Bernice is always early just on time or late for work.

The probability that she is early is 0.1, the probability she is just on time is 0.5.

What is the probability that she is late?

21)

A bag contains 20 balls, 9 of which are black, 6 white and 5 yellow. A ball is drawn at random from the bag its colour is noted and then it is put back in the bag. This is repeated 500 times.

1. a) How many times would you expect a black ball to be drawn?
2. b) How many times would you expect a yellow ball to be drawn?

22)

A bag contains 12 red balls, 8 green balls, 5 blue balls and 15 black balls. A ball is drawn at random. What is the probability that it is the following?

1. a) Red
2. b) Black
3. c) Red or black
4. d) Not green

23)

A box of coloured pencils has 20 different pencils. There are four red pencils, five blue, one green, three yellow two Brown, one black and four other colours.

A pencil is chosen at random. What is the probability that it is not red?

24)

A bag contains 18 light bulbs. 5 of these bulbs are defective. We choose 3 bulbs at random. What is the probability that;

a) two of the chosen light bulbs are defective

b) at least one of the chosen light bulbs is defective