

Activity sheet (Probability)

Aim: To find the probability of the given event.

Materials used:

Spin wheel:

Probability of:

Event 1:

Event 2:

Event3:

Result:

1. Probability of an event lies between 0 and 1.
2. Probability can never be negative.
3. A pack of playing cards consist of 52 cards which are divided into 4 suits of 13 cards each. Each suit consists of one ace, one king, one queen, one jack and 9 other cards numbered from 2 to 10. Four suits named spades, hearts, diamonds and clubs.
4. King, queen and jack are face cards.
5. The sum of the probabilities of all elementary events of an experiment is 1.
6. Two events A and B are said to be complements of each other if the sum of their probabilities is 1.
 2. For an event E, $P(\bar{E}) = 1 - P(E)$, where the event \bar{E} representing 'not E' is the complement of event E.
 3. For A and B two possible outcomes of an event.
 - (i) If $P(A) > P(B)$ then event A is more likely to occur than event B.
 - (ii) If $P(A) = P(B)$ then events A and B are equally likely to occur.
 4. a

Top Diagrams

1. Suits of Playing Card

Heart



Spades



Diamond



Club



2. Face Cards

A King of diamond



A Queen of club



A Jack of Clubs



Probability of having 53 Sundays in a leap year

Solution:

1 year = 365 days. A leap year has 366 days

A year has 52 weeks. Hence there will be 52 Sundays for sure.

52 weeks = 364 days, $366 - 364 = 2$ days

In a leap year there will be 52 Sundays and 2 days will be left.

These 2 days can be: 1. Sunday, Monday 2. Monday, Tuesday 3. Tuesday, Wednesday

4. Wednesday, Thursday 5. Thursday, Friday 6. Friday, Saturday 7. Saturday, Sunday

Of these total 7 outcomes, the favourable outcomes are 2. Hence the probability of getting 53 days

Choice is yours , Choose the Best:

1.If a digit is chosen at random from the digits 1,2,3,4,5,6,7,8,9 then the probability that it is odd is

a.4/9 b.5/9 c.1/9 d.2/3

2. A bag contains 5 red balls and some blue balls. If the probability of drawing a blue ball is double that of a red ball, find the no. Of blue ball in bag.

a.1 b.2 c.5 d.10

3. A letter is chosen at random from the letters of word 'MOBILE' . The probability that the letter is vowel, is

a.1/3 b.3/7 c.1/6 d.1/2

4.what is the probability that a non leap year has 53 Sundays

a.6/7 b.1/7 c.5/7 d.none of these

5.two dice are rolled simultaneously. The probability that they show different faces is

a.2/3 b.1/6 c.1/3 d.5/6

6. A bag contains 3 red balls, 5 black balls and 4 white balls. A ball is drawn at random from bag. What is the probability that the ball drawn is not red

a.1/3 b. 2/3 c.8/3 d.none of these

7. what is the probability that a number selected from the numbers 1,2,3,.....25 is a prime no. , when each of the given numbers is equally likely to be selected?

a.9/25 b.6/25 c. 4/25 d.none of these

8. Two dices are rolled together the probability of getting the same no. On both sides

a.1/2 b.1/3 c.1/6 d.1/12

9. Tickets numbered from 1 to 20 are mixed up together and then a ticket is drawn at random. What is the probability that the ticket has a number which is a multiple of 3 or 7
a. $\frac{2}{5}$ b. $\frac{5}{20}$ c. $\frac{6}{20}$ d. $\frac{3}{20}$
10. A die is thrown. What is the probability that an even no. Or a multiple of 3 comes
a. $\frac{2}{3}$ b. $\frac{4}{3}$ c. $\frac{4}{6}$ d. none of these
11. Two dice are thrown. What is the probability that it is a same no. On both dice i.e. a doublet
a. $\frac{1}{12}$ b. $\frac{1}{6}$ c. $\frac{4}{36}$ d. none of these
12. A box contains numbered 3,5,7,9.....35,37. A card is drawn at random from the box. find the probability that the no. On the drawn card is a prime no.
a. $\frac{5}{9}$ b. $\frac{6}{9}$ c. none of these
13. What is the probability that a no. Selected at random from the no. 3,5,7...9 is a multiple of 4?
a. $\frac{2}{7}$ b. $\frac{3}{7}$ c. none of these
14. The probability of guessing the correct answer to a certain test question is $\frac{x}{12}$. if probability of not guessing the correct answer to the question is $\frac{2}{3}$, then find x
a. 2 b. 4 c none of these
15. One card is drawn from a well shuffled deck of 52 cards. Fin thr probability of drawing '10' of a black suit
a. $\frac{1}{26}$ b. $\frac{3}{52}$ c. $\frac{1}{52}$
16. Two dice are thrown. What is the probability of obtaining a total of 10 or 11
a. $\frac{5}{36}$ b. $\frac{3}{36}$ c. $\frac{4}{36}$ d. none of these
17. Seven persons are to be seated in a row. The probability that two particular persons sits next to each other
a. $\frac{1}{3}$ b. $\frac{1}{6}$ c. $\frac{2}{7}$ d. $\frac{1}{2}$
18. 5 male and 3 female candidates are there for selection as on manager in a company. Find the probability the male is selected.
a. $\frac{3}{2}$ b. $\frac{5}{8}$ c. none of these
19. Two dice are thrown. What is the probability of obtaining a total of 10 or 11
a. $\frac{5}{36}$ b. $\frac{3}{36}$ c. $\frac{2}{36}$ d. none of these
20. Cards marked with the no. 2 to 101 are placed in a box and mixed thoroughly. One card is drawn find the probability that it is a perfect square no.
a. $\frac{3}{100}$ b. $\frac{9}{100}$ c. $\frac{64}{100}$ d. $\frac{8}{100}$
21. A bag contains 12 balls of which x are white balls, if 6 more balls are put in the bag ,the probability of drawing a white ball will be double than that. Find x
a. 3 b. 4 c. 5 d. $\frac{4}{6}$
22. A bag contain 5 red balls and some blue balls. If the probability of drawing a blue ball is double that of a red ball, find the no. Of blue balls in the bag.
a. 10 b. 6 c. 5 d. 0

23. In a well shuffled deck of cards[52] find the probability of drawing '2' of spade
a.1 b.3/52 c. 1/52 d.none of these
24. 2 dies are thrown together. Find the probability of getting the Same no. On both sides
a.1/2 b.1/3 c.1/6 d.1/12
25. A no. Is selected from first 50 natural no. What is the probability that it is a multiple of 3 or 5
a.13/25 b.21/50 c.1/20 d.17/20
26. A card is drawn from a pack of cards numbered 1 to 52. The probability that the number on the card is a perfect square is
(a) 131 (b) 132 (c) 527 (d) 525
27. A die is thrown once, then the probability of getting a number greater than 3 is
(a) 21 (b) 32 (b) 6 (d) 0
28. When a die is thrown, the probability of getting an odd number less than 3 is
(a) 61 (b) 31 (c) 21 (d) 0
29. A card is drawn from a deck of 52 cards. The event 'E' is that card which is not ace of hearts. The number of outcomes favourable to E is
(a) 4 (b) 13 (c) 48 (d) 51
30. One ticket is drawn at random from a bag containing tickets numbered 1 to 40. The probability that the selected ticket has a number which is a multiple of 5 is
(a) 51 (b) 53 (c) 54 (d) 31

Bring a Shade :

Student ID:



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Remark Office OMR



- Please follow directions on exam questions sheet.
- Fill in circle completely
- To make changes, erase marks completely

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LEVEL-1

1. The probability of getting bad egg in a lot of 400 is 0.035. Then find the no. of bad eggs in the lot. [ans.14]
2. Write the probability of a sure event. [ans.1]
3. What is the probability of an impossible event. [ans.0]
4. When a dice is thrown, then find the probability of getting an odd number less than 3. [ans. $\frac{1}{6}$]
5. A girl calculates that the probability of her winning the third prize in a lottery is 0.08. If 6000 tickets are sold, how many ticket has she brought. [Ans.480]
6. What is probability that a non-leap year selected at random will contain 53 Sundays. [Ans. $\frac{1}{7}$]
7. A bag contains 40 balls out of which some are red, some are blue and remaining are black. If the probability of drawing a red ball is $\frac{11}{20}$ and that of black ball is $\frac{1}{5}$, then what is the no. of black ball. [Ans.10]
8. Two coins are tossed simultaneously. Find the probability of getting exactly one head. [Ans. $\frac{1}{2}$]
9. A card is drawn from a well suffled deck of 52 cards. Find the probability of getting an ace. [Ans. $\frac{1}{13}$]
10. In a lottery, there are 10 prizes and 25 blanks. Find the probability of getting a prize. [Ans. $\frac{2}{7}$]

LEVEL-2

1. Find the probability that a no. selected at random from the number 3,4,5,6,.....25 is prime. [Ans. $\frac{8}{23}$]
2. A bag contains 5 red, 4 blue and 3 green balls. A ball is taken out of the bag at random. Find the probability that the selected ball is (a) of red colour (b) not of green colour. [Ans. $\frac{5}{12}, \frac{3}{12}$]
3. A card is drawn at random from a well-shuffled deck of playing cards. Find the probability of drawing
(a) A face card (b) card which is neither a king nor a red card [Ans. $\frac{3}{13}, \frac{6}{13}$]
4. A dice is thrown once. What is the probability of getting a number greater than 4? [Ans. $\frac{1}{3}$]
5. Two dice are thrown at the same time. Find the probability that the sum of two numbers appearing on the top of the dice is more than 9. [Ans. $\frac{1}{6}$]
6. Two dice are thrown at the same time. Find the probability of getting different numbers on both dice. [Ans. $\frac{5}{6}$]
7. A coin is tossed two times. Find the probability of getting almost one head. [Ans. $\frac{3}{4}$]
8. Cards with numbers 2 to 101 are placed in a box. A card selected at random from the box. Find the probability that the card which is selected has a number which is a perfect square. [Ans. $\frac{9}{100}$]
9. Find the probability of getting the letter M in the word "MATHEMATICS". [Ans. $\frac{2}{11}$]

LEVEL-3

1. Cards bearing numbers 3,5,.....,35 are kept in a bag. A card is drawn at random from the bag. Find the probability of getting a card bearing (a) a prime number less than 15 (b) a number divisible by 3 and 5.

$$[\text{Ans. } \frac{5}{17}, \frac{2}{17}]$$

2. Two dice are thrown at the same time. Find the probability of getting (a) same no. on the both side (b) different no. on both sides.

$$[\text{Ans. } \frac{1}{6}, \frac{5}{6}]$$

3. A child game has 8 triangles of which three are blue and rest are red and ten squares of which six are blue and rest are red. One piece is lost at random. Find the probability of that is (a) A square (b) A triangle of red colour.

$$[\text{Ans. } \frac{5}{9}, \frac{5}{18}]$$

4. Two dice are thrown simultaneously. What is the probability that:

(a) 5 will not come up either of them? (b) 5 will come up on at least one? (c) 5 will come at both dice?

$$[\text{Ans. } \frac{25}{36}, \frac{11}{36}, \frac{1}{36}]$$

5. The king, queen and jack of clubs are removed from a deck of 52 playing cards and remaining cards are shuffled. A card is drawn from the remaining cards. Find the probability of getting a card of (a) heart (b) queen (c) clubs

$$[\text{Ans. } \frac{13}{49}, \frac{3}{49}, \frac{10}{49}]$$

6. A game consist of tossing a one-rupee coin 3 times and noting its outcome each time. Hanif wins if all the tosses give the same result, i.e., 3 heads or three tails and loses otherwise. Calculate the probability that hanif will lose the game.

$$[\text{Ans. } \frac{3}{4}]$$

7. Cards bearing numbers 1,3,5,.....,37 are kept in a bag. A card is drawn at random from the bag. Find the probability of getting a card bearing

(a) a prime number less than 15

$$[\text{Ans. } \frac{5}{19}]$$

(b) a number divisible by 3 and 5.

$$[\text{Ans. } \frac{2}{19}]$$

8. A dice has its six faces marked 0,1,1,1,6,6. Two such dice are thrown together and total score is recorded. (a) how many different scores are possible? (b) what is the probability of getting a total of seven?

$$[\text{Ans. } \{a\} 5 \text{ scores } (0,1,2,6,7,12) \quad \{b\} \frac{1}{3}]$$

WORKSHEET- 3 (PROBABILITY)

1. Solve by cool:

♣ Cards with numbers 2 to 101 are placed in a box. A card is selected at random.

Find the probability that the card has (i) an even number (ii) a square number (iii) a two-digit number (iv) a prime number.

♣ A child's game has 8 triangles of which 3 are blue and rest are red, and 10

squares of which 6 are blue and rest are red. One piece is lost at random. Find the probability that it is a (i) Triangle (ii) Square (iii) square of blue colour (iv) triangle of red color.

♣ At a fete, cards bearing numbers 1 to 1000, one number on one card, are put in a box. Each player selects one card at random and that card is not replaced. If the selected card has a perfect square number greater than 500, the player wins a prize. What is the probability that (i) the first player wins a prize. (ii) the second player wins a prize, if the first has won.

♣ The king, queen and jack of clubs are removed from a deck of 52 playing cards and then well-shuffled. Now one card is drawn at random from the remaining cards. Determine the probability the cards is

(i) a heart (ii) a king (iii) neither an ace nor a black king (iv) 10 of hearts (v) a black face cards

(vi) an ace or a queen

- ♣ In a game entry fee is ₹.5. The game consists of tossing a coin 3 times. If one or two heads show, Shweta gets her entry fee back. If she throw 3 heads, she receives double the entry fee. Otherwise she will lose. For tossing a coin three times, find the probability that she (i) lose the entry fee (ii) gets double entry fee (ii) just gets her entry fee back.*
- ♣ A die has six faces marked 0, 1, 1, 1, 6, 6. Two such dice are thrown together and the total score is recorded. (i) How many different scores are possible ? (ii) What is the probability of getting a total of 7.*