MATHS

BOOKS - NAVNEET PUBLICATION

PROBABILITY

Solved

1. How many possibilities are there in each of the following ?

Vanita knows the following sites in

Maharashtra. She is planning to visit one of them in her summer vacation.

Ajintha, Mahabaleshwar , Lonar, Sarovar , Tadoba, Wildlife sactuary , Amboli, Raigad, Matheran, Anandavan.

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2. How many possibilities are there in each of the following ?

Any day of a week is to be selected randomly.

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3. How many possibilities are there in the following? Select one card from the pack of 52 cards.

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4. How many possibilities are there in each of the following ?

One number from 10 to 20 is written on each card. Select one card randomly.

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5. In which of the following experiments is the possibility of expected outcome more ?

Getting 1 on the upper face when a die is thrown.

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6. In which of the following experiments is the possibility of expected outcome more ?

Getting head by tossing a coin.

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7. For each of the following experiments , write the sample space S and the number of sample points n(s):

One coin and one die are thrown simultaneously.

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8. Write the sample space S and the number of sample points n(s):

Two digit numbers are formed using digits 2,3 and 5 without repeating the digits.

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9. Write the sample space S, and number of sample points n(s) for each of the following experiments. Also, write events A,B,C in the set from and write n(A),n(B),n(C):

One die is rolled, Event A: Even number on the upper face. Event B: Odd number on the upper

face. Event C : Prime number on the upper face.

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10. Write the sample space S, and number of sample points n(s) for each of the following experiments. Also, write events A,B,C in the set from and write n(A),n(B),n(C):

Two dice are rolled simultaneously. Event A: The sum of the digits on the upper face is a multiply of 6. Event B: The sum of the digits on

the upper face is minimum 10. Event C: The same digit on both the upper faces.

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11. Write sample space 'S' and number of sample point 'n(S)' for the following experiment. Also write events A,B,C in the set form and write n(A), n(B), n(C): Three coins are tossed simultaneously: Event A: To get atleast two heads. Event B: To get no head. Event C: To get head on the second coin.

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12. Write the sample space S, and number of sample points n(s) for each of the following experiments. Also, write events A,B,C in the set from and write n(A),n(B),n(C):

Two digit numbers are formed using the deigits 0,1,2,3,4,5 without reptition of the digits. Event A : The number formed is even . Event B : The number formed is divisible by 3. Event C : The number formed is greater than 50.

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13. Write the sample space S, and number of sample points n(s) for each of the following experiments. Also, write events A,B,C in the set from and write n(A),n(B),n(C):

From three men and two women , environment committee of two persons is to be formed. Event A : There must be atleast one women member. Event B : One man , one woman committee to be formed. Event C There should not be a woman member

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14. Write the sample space S, and number of sample points n(s) for each of the following experiments. Also, write events A,B,C in the set from and write n(A),n(B),n(C):

One coin and one die are thrown simultaneously. Event A : To get a head and an odd number. Event B: To get a head or a tail and an even number. Event C : Number on the upper face is greater than 7 and tail on the coin.

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15. If two coins are tossed , find the probability of the following events:

Getting at least one head.

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16. If two coins are tossed , find the probability of the following events:

Getting no head.

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17. If two dice are rolled simultaneously, find the probability of the following events :

The sum of the digits on the upper faces is at least 10.

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18. If two dice are rolled simultaneously, find the probability of the following events :

The sum of the digits on the upper faces is 33.

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19. If two dice are rolled simultaneously, find the probability of the following events :

The digit on the first die is greater than the digit on the second die.

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20. There are 15 tickets in a box, each bearing one of the numbers from 1 to 15 . One ticket

drawn at random from the box. Find the probability of event that the ticket drawn shows an even number.

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21. There are 15 tickets in a box, each bearing one of the numbers from 1 to 15 . One ticket drawn at random from the box. Find the probability of event that the ticket drawn shows a number which is a multiple of 5.

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22. A two digit number is formed with digits 2,3,5,7,9 without repetition. What is the probability that the number formed is an odd number ?

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23. A two digit number is formed with digits 2,3,5,7,9 without repetition. What is the probability that the number formed is a multiply of 5 ?

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24. A card is drawn at random from a pack of well shuffled 52 playing cards. Find the probability that the card drawn is (1) an ace (2) a spade.

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25. Choose the correct alternative answer for each of the following questions:

Which number cannot represent a probability?

A. (a) 0.1

B. (b) 1.5

C. (c) 0.15

D. (d) 0.7

Answer:

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26. A die is rolled. What is the probability that the number appearing on upper face is less than 3? a) $\frac{1}{6}$ b) $\frac{1}{3}$ c) $\frac{1}{2}$ d) 0

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27. What is the probability of the event that a number chosen from 1 to 100 is a prime number ?

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28. There are 40 cards in a big . Each bears a number from 1 to 40. One card is drawn at random. What is the probability that the card bears a number which is multiple of 5 ?

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29. If $n(A) = 2$, $P(A) = \frac{1}{5}$, Then $n(S) = ?$

a)10 b)$\frac{5}{2}$ c)$\frac{2}{5}$ d)$\frac{1}{3}$

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30. Basketball players John,Vasim,Akash were practising the ball drop in the basket.The probabilities of success for John,Vasim and Akash are 4/5,0.83 and 58% respectively.Who had the greatest probability of success?

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31. In a hockey team there are 6 defenders, 4 offenders and 1 goalee. Out of these, one player is to be selected randomly as a captain. Find the probability of the selection that: (i)

The goalee will be selected (ii) A defender will be selected.

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32. In a hockey team there are 6 defenders, 4 offenders and 1 goalee. Out of these, one player is to be selected randomly as a captain . Find the probability of the selection that a defender will be selected.

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33. Joseph kept 26 cards in a cap,bearing one english alphabet on each card.One card is drawn at random.What is the probability that the card drawn is a vowel card?

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34. A balloon vendor has 2 red , 3 blue and 4 green balloons. He wants to choose one of them at random to give it to pranali. What is the probability of the event that pranali gets, a red balloon

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35. A balloon vendor has 2 red, 3 blue and 4 green balloons. He wants to choose one of them at random to give it to Pranali. What is the probability of the event that Pranali gets: (i) a red balloon (ii) a blue balloon (iii) a green balloon.

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36. A balloon vendor has 2 red, 3 blue and 4 green balloons. He wants to choose one of them at random to give it to Pranali. What is the probability of the event that Pranali gets: (i) a red balloon (ii) a blue balloon (iii) a green balloon.

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37. A box contains 5 red, 8 blue and 3 green pens. Rujuta wants to pick a pen at random.

What is the probability that the pen is blue?

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38. A box contains 30 tickets , bearing only one number from 1 to 30 on each . If one ticket is drawn at random , find the probability of an event that the ticket drawn bears

an odd number.

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39. A box contains 30 tickets,bearing only one number from 1 to 30 on each.If one ticket is drawn at random,Find the probability of an event that the ticket drawn bears (i)an odd number.(ii)a complete square number.

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40. Length and breadth of a rectangular garden are 77 m and 50 m. There is a circular lake in the garden having diameter 14 m . Due

to wind, a towel from a terrace on a nearby building fell into the garden. Find the probability of the event that it fell in the lake.

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41. In a game of chance, a spinning arrow comes to rest at one of the numbers 1,2,3,4,5,6,7,8. All these are equally likely outcomes. Find the probability that it will rest at 8.

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42. In a game of chance, a spinning arrow comes to rest at one of the numbers 1,2,3,4,5,6,7,8. All these are equally likely outcomes. Find the probability that it will rest at an odd number.

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43. In a game of chance, a spinning arrow comes to rest at one of the numbers 1,2,3,4,5,6,7,8. All these are equally likely

outcomes. Find the probability that it will rest at number greater than 2.

44. In a game of chance, a spinning arrow comes to rest at one of the numbers 1,2,3,4,5,6,7,8. All these are equally likely outcomes. Find the probability that it will rest number less than 9.

45. There are six cards in a box each bearing a number from 0 to 5. Find the probability of each of the following events, that a card drawn shows

a natural number.

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46. There are six cards in a box each bearing a number from 0 to 5. Find the probability of each of the following events, that a card drawn shows a number less than 1.

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47. There are six cards in a box each bearing a number from 0 to 5. Find the probability of each of the following events, that a card drawn shows a whole number.

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48. There are six cards in a box each bearing a number from 0 to 5. Find the probability of

each of the following events, that a card drawn shows a number greater than 5.

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49. A bag contains 3 red, 3 white and 3 green balls. One ball is taken out of the bag at random. What is the probability that the ball picked up is red.

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50. A bag contains 3 red, 3 white and 3 green balls. One ball is taken out of the bag at random. What is the probability that the ball picked up is not red.

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51. A bag contains 3 red, 3 white and 3 green balls. One ball is taken out of the bag at random. What is the probability that the ball picked up is either red or white.

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52. Each card bears one letter from the word 'mathematics'. The cards are placed on the table upside down. Find the probability that a card drawn bears the letter 'm'.

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53. Out of 200 students from a school. 135 like kabaddi and the remaining students do not like the game. If one student is selected at

random from all the students, find the probability that the student selected doesn't like kabaddi.

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54. A two digit number is to be formed from the digits 0,1,2,3,4. Repetition of the digits is allowed. Find the probability that the number so formed is a prime number.

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55. A two digit number is to be formed from the digits 0,1,2,3,4. Repetition of the digits is allowed. Find the probability that the number so formed is a multiple of 4.

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56. A two digit number is to be formed from the digits 0,1,2,3,4. Repetition of the digits is allowed. Find the probability that the number so formed is a multiple of 11.

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57. The faces of a die bear numbers 0,1,2,3,4,5. If the die is rolled twice, then find the probability that the product of digits on the upper face is zero.

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Exercise

1. There are 5 red and 3 green pens in a bag . There are 2 red and 6 green pens in another bag. A pen is picked up at random from one bag. Using the following instructions, find the probability that the pen picked up:

From one bag is red.

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2. There are 5 red and 3 green pens in a bag . There are 2 red and 6 green pens in another

bag. A pen is picked up at random from one bag. Using the following instructions, find the probability that the pen picked up:

From another bag is red.

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3. There are 5 red and 3 green pens in a bag . There are 2 red and 6 green pens in another bag. A pen is picked up at random from one bag. Using the following instructions, find the

probability that the pen picked up:

From either of the bags is red.

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4. A jar contains 40 balls , some are red and the others are green . The probability of drawing a green balls is 2/5. Find the number of red balls in the jar.

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5. A bag contains 50 balls . Some of them are white, some are blue and some are red. The number of white balls is 11 times the number of blue balls. The number of red balls is less than the number of white balls but more than the number of blue balls. If one ball is taken out at random from the bag, what is the probability that it red ?

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6. Choose the correct alternative for each of the following questions:

Which of the following cannot represent probability?

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7. A die is rolled. What is the probability of getting an even number on the upper face?

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8. Choose the correct alternative for each of the following questions:

What is the probability of the event that a number chosen from 1 to 50 is an odd number ?

A. (a) 0.2

B. (b) 0.4

C. (c) 0.5

D. (d) 0.6

Answer:

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9. Choose the correct alternative for each of the following questions:

If P(A)= 1/6 and n (A) =6, then n(S)=?

A. (a) 6

B. (b) 36

C. (c) 1

D. (d) 3

Answer:

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10. Choose the correct alternative for each of the following questions:

If P(B) =3/13 and n(s) =52, then n(B) =?

A. (a) 13

B. (b) 3

C. (c) 13/3

D. (d) 12

Answer:

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11. Choose the correct alternative for each of the following questions:

A die is rolled . E is the event that the uppermost face shows a prime number. What is E equal to ?

A. (a) 1,3,5

B. (b) 2,3,5

C. (c) 1,2,3

D. (d) 2,3,4

Answer:

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12. A die is rolled . What is the probability that the number appearing on the upper face is a multiple of 4 ?

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13. A die is rolled . What is the probability that the number appearing on the upper face is less than 2 ?

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14. A coin is tossed three times . What is the probability of getting no tail ?

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15. Two coins are tossed simultaneously. What is the probability of getting at least one tail ?

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16. A card is drawn at random from a well-shuffled pack of 52 playing cards. What is the probability of getting a black card ?

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17. A card is drawn at random from a well-shuffled pack of 52 playing cards. What is the probability of getting no heart ?

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18. A card is drawn at random from a well-shuffled pack of 52 playing cards. What is the probability of getting a king ?

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19. Write the sample space S and the number of sample points $n(S)$ for each of the following: A coin is tossed

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20. Write the sample space S and the number of sample points $n(S)$ for each of the following: Two coins are tossed simultaneously

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21. Write the sample space S and the number of sample points $n(S)$ for each of the following: A die is rolled

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22. Two coins are tossed simultaneously. Find the probability of the event A getting one head.

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23. Two coins are tossed simultaneously. Find the probability of the event A getting at least one head.

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24. Two coins are tossed simultaneously. Find the probability of the event A getting at the most one head.

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25. Two coins are tossed simultaneously. Find the probability of the event A getting no head.

Watch Video Solution

26. A die is rolled . Write the probability of the event A getting a prime number

Watch Video Solution

27. A die is rolled . Writr the probability of the event A getting

an even number

Watch Video Solution

28. A die is rolled . Write the probability of the event A getting a multiple of 3.

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29. If $n(A) = 4, \quad n(S) = 12,$ What is $P(A) = ?$

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30. If $P(A) = \frac{3}{4}, \quad n(A) = 24,$ what is $n(S) = ?$

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31. If $P(A) = \frac{4}{9}$, $n(S) = 36$, what is $n(A) = ?$

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32. A bag contains a red, a blue,a yellow and a white ball all of the same size. What is the probability that the ball drawn at random is not a blue ball?

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33. A bag contains a red, a blue,a yellow and a white ball all of the same size. What is the probability that the ball drawn at random is either blue or yellow?

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34. Write the number of sample points $n(S)$, when three coins are tossed simultaneously.

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35. How is the probability 25% written as fraction?

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36. How is the probability $\frac{1}{5}$ written in percentage?

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37. One coin and one die are thrown simultaeneously.Write the sample sapce S and

n(S).

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38. Two coins are tossed simultaneously. Write the sample space S and the number of sample points $n(S)$.

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39. Two coins are tossed . Find the probability of getting a head on both the coins.

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40. A die is rolled. E is the event that the uppermost face shows a number multiple of 3. Write $n(E)$ and $P(E)$.

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41. Two coins are tossed simultaneously . Find the probability of getting

at least one tail.

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42. Two coins are tossed simultaneously. Find the probability of the event A getting at least one head.

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43. Three coins are tossed simultaneously . Find the probability that tail appears on the middle one.

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44. A die is rolled. Find the probability that a number greater than 2 comes up.

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45. Form two digit numbers using the digits $0, 1, 2, 3, 4$ without repeating the digits. Find the probability that the number so formed is greater than 30.

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46. A two digit number is to be formed from the digits 0,1,2,3,4. Repetition of the digits is allowed. Find the probability that the number so formed is a prime number.

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47. Two coins are tossed simultaneously. Find the probability of the event A getting at the most one head.

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48. Two coins are tossed simultaneously . Find the probability of the events

no head turns up

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49. Two coins are tossed simultaneously . Find the probability of the events no tail truns up.

Watch Video Solution

50. Two coins are tossed simultaneously . Find the probability of the events at most one tail turns up.

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51. Two dice are rolled simultaneously. Find the probability that.

the sum of the numbers on their upper is at the kmost 5.

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52. Two dice are rolled simultaneously. Find the probability that.

The sum of the numbers on their upper faces is at lrasr 6.

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53. A bag contains 3 red, 3 white ,3 green and 3 black balls. One ball is picked up from the bag at random. Find the probability that the ball drawn is white.

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54. A bag contains 3 red, 3 white ,3 green and 3 black balls. One ball is picked up from the bag at random. Find the probability that the ball drawn is not white.

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55. In a game of chance, the spinning arrow rests at one of the numbers 1,2,3,4,5,6,7,8. All

these are equally likely outcomes. Find the probability of the following events:

The arrow rests at an odd number.

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56. In a game of chance, the spinning arrow rests at one of the numbers $1, 2, 3, 4, 5, 6, 7, 8$. All these are equally likely outcomes. Find the probability of the following events: It rests at a prime number

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57. In a game of chance, the spinning arrow rests at one of the numbers $1, 2, 3, 4, 5, 6, 7, 8$. All these are equally likely outcomes. Find the probability of the following events: It rests at a multiple of 2.

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58. Complete the following activity by filling the boxes:

The face of a die bear the numbers

$1, 3, 5, 7, 9, 11$. The die is rolled . Find the probability of getting a perfect square number on the upper face of the die.

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59. Complete the following activity by filling the boxes:

The face of a die bear the numbers 1,3,5,7,9,11.

The die is rolled . Find the probability of getting a perfect square number on the upper face of the die.

Let A be the event of grtting a perfect square number

Then A=..... n(A)=.....

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60. Complete the following activity by filling the boxes:

The face of a die bear the numbers 1,3,5,7,9,11.

The die is rolled . Find the probability of getting a perfect square number on the upper

face of the die.

P(A) = n(A)/n(S)=.....

A.)

B.

C.

D.

Answer:

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61. The six faces of a die are marked A,B,C,D,O,E . If the die is rolled once, find the probability of the event M is getting a vowel on the upper face of the die.

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62. A bag contains 4 red balls, 8 white balls, 5 green balls and 7 black balls all of the same size. One ball is picked up at random from the bag. Complete the following activity to find

the probability of the following events.

(i) Event A : the ball picked up is black. (ii) Event B: the ball picked up is not green. (iii) Event C: the ball picked up is white.

Total number of balls : $n(S) = 24$

$n(A) =$ ....., P(A) = n(A)/n(S)=.....

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63. A bag contains 4 red balls, 8 white balls, 5 green balls and 7 black balls all of the same size. One ball is picked up at random from the

bag. Complete the following activity to find the probability of the following events.

(i) Event A : the ball picked up is black. (ii) Event B: the ball picked up is not green. (iii) Event C: the ball picked up is white.

Total number of balls : n(S) =24

n(B) =..... P(B) = n(B)/n(S)=.....

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64. A bag contains 4 red balls, 8 white balls, 5 green balls and 7 black balls all of the same

size. One ball is picked up at random from the bag. Complete the following activity to find the probability of the following events.

(i) Event A : the ball picked up is black. (ii) Event B: the ball picked up is not green. (iii) Event C: the ball picked up is white.

Total number of balls : n(S) =24

n(C) =..... P(C) = n(C)/n(S)=.....

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65. A student made a cube shaped die from a card sheet. Instead of writing numbers 1,2,3,4,5,6 on its faces , he wrote letters a,b,c,d,e,f one on each face. He rolls the die twice. Find the probability that he gets a vowel on the upper face both the times.

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66. There are two boys and three girls . A committee of two is to be formed. Find the

probability that the committee contains

only girls

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67. There are two boys and three girls . A committee of two is to be formed. Find the probability that the committee contains

at least one girl.

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68. Two dice are rolled . Find the probability for the following events:

A is the event that the sum of the digits on the uppermost faces is at least 10.

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69. Two dice are rolled . Find the probability for the following events:

B is the event that the sum of the digits on the uppermost face is 13.

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70. Two dice are rolled . Find the probability for the following events:

C is the event that the sum of the digits on the uppermost faces is divisible by 5.

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71. Two dice are rolled . Find the probability for the following events:

D is the event that the sum of the digits on the uppermost faces is a multiple of 6.

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72. All the face cards of heart are removed from the pack of 52 cards and the remaining cards are reshuffled. A card is drawn at random. Find the probability of getting

a red face card

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73. All the face cards of heart are removed from the pack of 52 cards and the remaining cards are reshuffled. A card is drawn at random. Find the probability of getting

a queen

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74. All the face cards of heart are removed from the pack of 52 cards and the remaining cards are reshuffled. A card is drawn at

random. Find the probability of getting

a red card

Watch Video Solution

75. All the face cards of heart are removed from the pack of 52 cards and the remaining cards are reshuffled. A card is drawn at random. Find the probability of getting

a black card.

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76. There are six cards in a box , each bearing a number from 0 to 5. Find the probability of each of the following events, that a card drawn shows

a prime number

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77. There are six cards in a box , each bearing a number from 0 to 5. Find the probability of each of the following events, that a card

drawn shows

a number less than 5.

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78. There are six cards in a box , each bearing a number from 0 to 5. Find the probability of each of the following events, that a card drawn shows an even number.

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