MATHS

BOOKS - S CHAND MATHS (ENGLISH)

PROBABILITY

Example

1. A single letter is selected at random from the word "PROBABILITY" . The probability that it is a vowel is

A. $\frac{7}{11}$

B. $\frac{3}{11}$

C. $\frac{4}{11}$

D. $\frac{6}{11}$

Answer: C

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2. Tickets numbered 1 to 20 are mixed up thoroughly and then a ticket is drawn at

random. The probability that the ticket has a number which is multiple of 3 or 7 is

A. $\frac{2}{5}$

B. $\frac{3}{5}$

C. $\frac{4}{5}$

D. $\frac{1}{5}$

Answer: A

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3. If a card is drawn at random from a well-shuffled pack of 52 cards, then the probability of choosing an Honour card or Black card is

A. $\frac{8}{13}$

B. $\frac{17}{26}$

C. $\frac{21}{26}$

D. $\frac{1}{2}$

Answer: B

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4. Three squares of a chessboard are selected at random. The probability of selecting two squares of one colour and the other of a different colour is

A. $\frac{5}{2}$

B. $\frac{16}{21}$

C. $\frac{13}{21}$

D. $\frac{8}{21}$

Answer: B

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5. Three of six vertices of a regular hexagon are chosen at random. Tie probability that the triangle formed by these vertices is an equilateral triangle is

A. $\frac{3}{20}$

B. $\frac{3}{10}$

C. $\frac{-1}{10}$

D. $\frac{1}{4}$

Answer: C

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6. If seven persons are to be seated in a row, then the probability that two particular persons are seated next to each other is

A. A. $\frac{1}{7}$

B. B. $\frac{2}{7}$

C. C. $\frac{3}{7}$

D. D. $\frac{4}{7}$

Answer: B

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7. Three digit numbers are formed using the digits 0, 2, 4, 6, 8. A number is chosen out of these numbers at random. The probability that this number has same digits is

A. $\frac{1}{50}$

B. $\frac{3}{100}$

C. $\frac{1}{25}$

D. $\frac{1}{20}$

Answer: C

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8. An urn contains 5 blue and unknown number x of red balls. Two balls are drawn at random. If the probability of both of them being blue is $\frac{5}{14}$, then x is

A. A. 1

B. B. 2

C. C. 5

D. D. 3

Answer: D

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9. State which of the following events are mutually exclusive , Give reasons for your answer .

E_1 : a total of 8,E_2: a total of 12 in a single throw of two dice.

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10. State which of the following events are mutually exclusive , Give reasons for your answer .

E_1: a total of 11, E_2 : an odd number on each die in a simultaneous throw of two dice.

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11. State which of the following events are mutually exclusive , Give reasons for your answer .

E_1: a total of 8 , E_2 : an even number on the toss in two successive tosses of a die.

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12. State which of the following events are mutually exclusive , Give reasons for your answer .

E_1 a red card , E_2 : an ace , in a draw of a card from a deck.

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13. State which of the following events are mutually exclusive , Give reasons for your answer .

$E_1 : 2$ heads , E_2 at least one head in two successive tosses of a coln.

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14. State which of the following events are mutually exclusive , Give reasons for your answer .

$E_1 : amother$, E_(2)` :a woman in selecting the president of a ladies club .

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15. State which of the following events are mutually exclusive , Give reasons for your answer .

E_1 : owns house , E_2 : own a T.V set , in

getting a response from an individual selected in a survey.

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16. A die is rolled and a coin is tossed . show all the possible combined outcomes in a space diagram .

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17. A die is rolled and a coin is tossed .

List all the possible outcomes.

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18. A die is rolled and a coin is tossed .

Show all the possible combined outcomes in a

tre diagram .

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19. Three coins are tossed. Describe: Two events A and B which are mutually exclusive.

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20. Three coins are tossed .

Describe three events A and B C which are mutually exclusive and exhaustive.

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21. Three coins are tossed .

Describe three events A and B which are not mutually exclusive.

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22. Three coins are tossed .

Describe three events , A,B and C which are not mutually exclusive.

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23. Three coins are tossed .

Describe two events , A and C which are mutually exclusive but not exhaustive.

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24. Three coins are tossed .

Describe three A ,B and C which are mutually exclusive but not exhaustive.

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25. Find the probability of the occurrence of the digit 3 when an unbiased die is thrown .

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26. A card is drawn from a pack of 100 cards numbered 1 to 100. Find the probability of drawing a number which is a square.

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27. A die is thrown, find the probability of getting:

a prime number

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28. A die is rolled. If the outcome is an odd number, what is the probability that it is prime?

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29. A die is tossed once . What is the probability of the number 8 coming up ? What us the probability of a number less than 8 coming up ?

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30. A lot consists of 12 good pencils , 6 with minor defects and 2 with major defects .A pencil is chosen at random .Find the probability that this pencil is not defective.

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31. A single letter is selected at random from the word 'Probability'

. Find the probability that it is a vowel.

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32. What are the odds in favour of getting a 3 in a throw of a die ? What are the odds against getting a '3' ?

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33. If the odds in favour of an event are 4 to 5 , find the probability that it will occur .

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34. A ball is drawn at random from a box cpntaining 6 white , 8 red and 10 green balls . Determine the probability , that the ball drawn is (i) white (ii) , red , (iii) green , (iv) not red, (v) red or green.

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35. A card is drawn from a pack of cards . Find the probability that it is

a black card

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36. A card is drawn from a pack of cards . Find the probability that it is

a red card

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37. A card is drawn from a pack of cards . Find the probability that it is

a club

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38. A card is drawn from a pack of cards . Find the probability that it is

an ace

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39. A card is drawn from a pack of cards . Find the probability that it is

a red ace

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40. A card is drawn from a pack of cards . Find the probability that it is

ace of spaded

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41. A card is drawn from a pack of cards . Find the probability that it is

not a spade and

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42. A card is drawn from a pack of cards . Find the probability that it is

a king or a queen.

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43. If two coins are tossed once , what is the probability of getting (i) both heads , (ii) both heads or both talls (iii) at least one head ?

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44. Three unbiased coins are tossed . What is the probability of obtaining (i) all heads, (ii) two heads ,(iii) one head ,(iv) at least one head ,(v) at least all tails.

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45. Two unbiased dice are thrown . Find the probability that

six may be obtained as product ,

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46. Two unbiased dice are thrown . Find the probability that

both the dice show the same number .

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47. Two unbiased dice are thrown . Find the probability that

the first die shows 6 ,

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48. Two unbiased dice are thrown . Find the probability that

the total of the numbers on the dice is 8 ,

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49. Two unbiased dice are thrown . Find the probability that

the total numbers on the is greater than 8 ,

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50. Two unbiased dice are thrown . Find the probability that

sum of the numbers on the two faces is neither 9 nor 11 ,

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51. Two unbiased dice are thrown . Find the probability that the total numbers on the dice is 13

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52. Two unbiased dice are thrown . Find the probability that

the total of the numbers on the dice is any number from 2 to 12 , both inclusive.

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53. Two unbiased dice are rolled . Find the probability of

(a) obtaining a total of at least 10.

(b) getting a multiple of 2 on one die a and a multiple of 3 on the other die.

(c) getting a multiple of 3 as the sum.

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54. a die is thrown twice . What is the probability that at least one of the two

numbers is 4?

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55. three identical dice are rolled . Find the probability that the same number will appear on each of them .

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56. What is the probability that there are 53 Sunday in a leap year ?

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57. What is the chance that a non leap year , selected at random , will contain 53 Sunday ?

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58. A card is drawn from an ordinary pack of 52 cards and a gambler bets that, it is a spade or an ace. What are the odds against his wining this bet?

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59. Tickets are numbered from 1 to 100 . They are well shuffled and a ticket is drawn at random . What is the probability that the drawn ticket has

an number which is a multiple of 7?

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60. Tickets are numbered from 1 to 100 . They are well shuffled and a ticket is drawn at

random . What is the probability that the drawn ticket has

a number 5 or multiple of 5 ?

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61. Tickets are numbered from 1 to 100 . They are well shuffled and a ticket is drawn at random . What is the probability that the drawn ticket has

a number which is greater than 75 ?

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62. Tickets are numbered from 1 to 100 . They are well shuffled and a ticket is drawn at random . What is the probability that the drawn ticket has

a number which is a square ?

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63. From a set of 17 cards numbered 1,2,3,4,..., 16,17 , one card is drawn at random : Show that

the chance that its number is divisible by 3 or 7 is $\frac{7}{17}$.

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64. An integer is chosen at random from the first two hundred positive integers . What is the probability that the integer chosen is divisible by 6 or 8 ?

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65. The chance of an event happening is the square of the chance of a second event but the odds against the first are the cube of the odds against the second. The chances of the events are

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66. There are three events A, B, and C, one of which one and only one can happen. The odds

are 7 to 4 against A and 3 to 5 favour of B. Find the odds against C.

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67. Four cards are drawn from a full pack of cards . Find the probability that

all are diamonds ,

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68. Four cards are drawn from a full pack of cards . Find the probability that

there is one card of each suit,

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69. Four cards are drawn from a full pack of cards . Find the probability that

there are two spades and two hearts,

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70. Four cards are drawn from a full pack of cards . Find the probability that

all the four are kings,

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71. Four cards are drawn from a full pack of cards . Find the probability that

all the four are spades , and one of them is a king , and

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72. Four cards are drawn from a full pack of cards . Find the probability that

at least one of the four cards is an ace.

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73. In a hand at Whist, what is the probability that four kings are held by a specified player?

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74. A bag contains 7 white, 5 black and 4 red balls. Four balls are drawn without replacement find the probability that t least three balls are black.

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75. In an urn there are 4 white and 4 blank balls . What is the probalility of drawing the first ball white , the second black , the third white , and fourth black , and so on .

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76. A box contains 10red marbles, 20 blue marbles and 30 green marbles. 5 marbles are drawn at random. From the box, what is the probability that i. all are blue? ii. at least one is green?

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77. A bag contains 30 tickets numbered from 1 to 30 . Five tickets are drawn at random and

arranged in ascending order . Find the probability that the third number is 20.

(ii) a bag contains 50 tickets numbered 1,2,3 ....., 50 of which five are drawn at random and arranged in ascending order of magnitude $(x_1 < x_2 < x_3 < x_4 < x_5)$. What is the probability that $x_3 = 30$.?

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78. What is the probability of getting 9 cards of the same suit in one hand at a gane of

bridge ?

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79. There are 10 persons who are to seated around a circular table . Find the probability that two particular will always sit together .

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80. A party of n men is to be seated round a circular table . Find the odds against the event

two particular men sit together .

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81. A and B stand in a ring with 10 other persons . If the arrangement of the twelve persons is at random , find the chance that there are exactly three persons between A and B.

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82. A five figured number is formed by the digits 0,1,2,3,4, (without repetition). Find the probability that the number formed is divisible by 4.

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83. The first twelve letters of the alphabet are written down at random . What is the probability that there are four letters between the A and the B?

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84. If the letters of the word REGULATIONS be arranged at random, find the probability that there will be exactly four letters between the R and the E.

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85. The probability that Sunil will recelve a D in is matchematics course is 0.61 and the probability that he will receive a C is 0.28.

What is the probability tat Sunil will receive a C or D in mathematics ?

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86. Find the chance of throwing a total of 3 or 11 with two dice.

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87. There are 2 red and 3 black balls in a bag . 3 balls are taken out at random from the bag .

Find the probability of getting 2 red and 1 black balls or 1 red and 2 black balls .

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88. In a given race , the odds in favour of four horses A,B C , and D are 1 : 3 , 1 : 4 , 1 : 5 , and 1 : 6 respectively .Assuming that a dead heat is impossible , find the chance that one of them wins the race .

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89. (a) A drawer contains 50 bolts and 150 unts . Half of the bolts and half of the nuts are rusted . If one item is chosen at random , what is the probability that it is rusted or a bolt ?

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90. A ticket is drawn from two hundred tickets numbered from 1 to 200. Find the probility that the number is divisible by 2 or 3 or 5.

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91. A card is drawn from a well - shuffled pack of playing cards . What is the probability that it is elther a spade or an ace or both .

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92. In a group there are 3 women and 3 men . 4 people are selected at random from this group . Find the probability that 3 women and 1 man or 1 women and 3 men are selected .

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93. Two cards are drawn from a pack of 52 cards . What is the probability that either both are red or both are kings ?

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94. If $P(A \cup B) = 0.65$ and $P(A \cap B) = 0.15$, find $P(\overline{A}) + P(\overline{B})$.

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95. If $P(A) = \frac{1}{4}, P(B) = \frac{1}{2}$ and $P(A \cap B) = \frac{1}{8}$, find (a) `P(AuuB).

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96. When two dies are thrown , calculate the probability of throwing a total of (i) a 7 or an 11 , (ii) a doublet or a total of 6.

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97. A bag contains 20 tickest with marked numbers 1 to 20 . One ticket is drawn at random . Find the probability that it will be a multiple of 2 or 5.

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98. The probability that a person will win a game is $\frac{2}{3}$ and the probability that he will not win a horse race is $\frac{5}{9}$. If the probability of getting in at least one of the events is $\frac{4}{5}$

,what is the probability that he will be successful in both the events ?

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99. Supposing that it is 8 to 7 against a person who is now 30 years of age living till he is 60 and 2 to 1 against a person who is now 40 living till he is 70 , find the probability that at least one of these persons will be alive 30 years hence .

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Multiple Choice Question

1. A coin is tossed n times. The number of all possible events is

A. (a) 2^n

B. (b) 2^{2^n}

C. (c) 2^{n^2}

D. (d) $\left(2^n\right)^2$

Answer: B

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2. If the sample space of a random experiment is $S = \{w_1, w_2, \ldots, w_6\}$, then which of the following arrangements of probability are valid?

Outcomes	w_1	w_2	w_3	w_4	w_5	w_6
(i)	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$
(ii)	$\frac{1}{8}$	$\frac{2}{3}$	$\frac{1}{3}$	$\frac{1}{3}$	$-\frac{1}{8}$	$-\frac{1}{3}$
(iii)	1	0	0	0	0	0
(iv)	0.1	0.2	0.3	0.4	0.5	0.6

A. (i) and (iii) only

B. (i) , (ii) and (iii) only

C. (i) and (ii) only

D. (i) , (ii) , (iii) and (iv)

Answer: A

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3. Three dice are thrown simultaneously. The probability of getting a total of atleast 6 is

A. $\frac{5}{108}$

B. $\frac{103}{108}$

C. $\frac{7}{108}$

D. $\frac{53}{54}$

Answer: B

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4. The probability that a non-leap year selected at random will have 53 Tuesday or Wednesdays

A. $\frac{2}{7}$

B. $\frac{3}{7}$

C. $\frac{1}{7}$

D. $\frac{4}{7}$

Answer: A

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5. A card is drawn from a deck of 52 cards. The probability of getting a king or a heart or a red.

A. A. $\frac{11}{26}$

B. B. $\frac{15}{26}$

C. C. $\frac{4}{13}$

D. D. $\frac{7}{13}$

Answer: D

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6. While shuffling a pack of 52 cards, 2 cards are accidently dropped. The probability that missing cards are of different colours is

A. $\frac{26}{51}$

B. $\frac{25}{51}$

C. $\frac{1}{2}$

D. $\frac{25}{52}$

Answer: A

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7. Four cards are drawn from a well-shuffled pack of 52 cards. The probability of obtaininge Windows 3 diamonds and one spade is

A. $\frac{^{26}C_4}{^{52}C_4}$

B. $\frac{^{26}C_2 \times {}^{26}C_2}{52C_1}$

C. $\frac{^{13}C_3 \times {}^{13}C_1}{52C_4}$

D. $\frac{^{13}C_3 \times {}^{10}C_1}{52C_4}$

Answer: C

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8. The letters of the word "SOCIETY" are placed at random in a row. The probability that three vowels occur together is

A. $\frac{1}{7}$

B. $\frac{2}{7}$

C. $\frac{3}{7}$

D. $\frac{4}{7}$

Answer: A

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9. An urn contains 9 red 7 white and 4 black balls. A ball is drawn at random. The

probability that ball drawn is neither black nor red is

A. $\frac{13}{20}$

B. $\frac{7}{20}$

C. $\frac{9}{20}$

D. $\frac{1}{5}$

Answer: B

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10. A bag contains 20 discs numbered 1to 20. A disc is drawn from the bag. The probability that it bears a prime number is

A. $\frac{3}{5}$

B. $\frac{11}{20}$

C. $\frac{2}{5}$

D. $\frac{9}{20}$

Answer: C

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11. A coin is tossed twice. The probability of getting atleast one tail is

A. $\frac{1}{4}$

B. $\frac{3}{4}$

C. $\frac{1}{2}$

D. $\frac{3}{2}$

Answer: B

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12. If the odds in favour of an eventare 2:1 then the probability of its occurrence is

A. $\frac{2}{3}$

B. $\frac{1}{3}$

C. $\frac{1}{2}$

D. $\frac{1}{3}$

Answer: A

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13. If the odds in favour of an event are 4:5, then the probability of non-occurrence of that event is

A. $\frac{1}{3}$

B. $\frac{2}{3}$

C. $\frac{5}{9}$

D. $\frac{4}{9}$

Answer: C

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14. Let E_1 and E_2 are two mutually exclusive and exhaustive events. If odds are 2:3 against E_1 then odds in favour of E_2 are

A. $3:2$

B. $1:3$

C. $3:1$

D. $2:3$

Answer: D

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15. Events A and B are mutually exclusive exhaustive . If $P(E_1) = \frac{2}{3}P(E_2)$, then the odds in favor of E_2 are (i) $3:1$ (ii) $1:3$ (iii) $3:2$ (iv) $2:3$

A. $3:1$

B. $1:3$

C. $3:2$

D. $2:3$

Answer: C

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16. If two dice are thrown together, then the probability that atleast one die will show a number greater than 4 is

A. $\frac{2}{3}$

B. $\frac{1}{3}$

C. $\frac{4}{9}$

D. $\frac{5}{9}$

Answer: D

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17. Two dice are thrown simultaneously. The probability that the sum of the numbers appearing on them is a prime number is

A. $\frac{5}{12}$

B. $\frac{1}{2}$

C. $\frac{7}{12}$

D. $\frac{2}{3}$

Answer: A

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18. A and B throw two dice each. If A gets a sum of 9 on his two dice, then the probability of B getting a higher sum is

A. $\frac{1}{6}$

B. $\frac{1}{36}$

C. $\frac{2}{9}$

D. $\frac{11}{36}$

Answer: A

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19. In a single throw of three dice, the probability of getting the same number on the three dice is

A. $\frac{1}{6}$

B. $\frac{1}{36}$

C. $\frac{5}{216}$

D. $\frac{7}{216}$

Answer: B

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20. Two cards are drawn at random from a well shuffled pack of 52 cards. The probability that cards are of different suits is a) $\frac{1}{221}$ b) $\frac{2}{221}$ c) $\frac{39}{51}$ d) $\frac{25}{52}$

A. a) $\frac{1}{221}$

B. b) $\frac{2}{221}$

C. c) $\frac{39}{51}$

D. d) $\frac{25}{52}$

Answer: A

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21. Six boys and six girls sit in a row randomly.

The probability that the six girls sit together is

A. $\frac{17}{132}$

B. $\frac{15}{132}$

C. $\frac{131}{132}$

D. $\frac{1}{132}$

Answer: D

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22. Five boys and four girls sit in a row randomly. The probability that no two girls sit together

A. $\frac{41}{42}$

B. $\frac{5}{42}$

C. $\frac{11}{42}$

D. $\frac{3}{21}$

Answer: B

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23. If A and B are any two events P $(A \cup B) = \frac{2}{3}$ and $P(\overline{B}) = \frac{1}{2}$, then $P(A \cap \overline{B})$ is

A. $\frac{1}{2}$

B. $\frac{2}{3}$

C. $\frac{1}{6}$

D. $\frac{1}{3}$

Answer: C

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24. If the probability of A to fail in an examination is $\frac{1}{5}$ and that of B is $\frac{3}{10}$, then the probability exactly one of A or B to fail is

(i) $\frac{11}{25}$ (ii) $\frac{19}{50}$ (iii) $\frac{1}{2}$ (iv) $\frac{3}{50}$

A. $\frac{11}{25}$

B. $\frac{19}{50}$

C. $\frac{1}{2}$

D. $\frac{3}{50}$

Answer: B

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25. If A and B are mutually exclusive and exhaustive events and P(A) = $\frac{1}{3}$ P(B), then P(A) is equal to (i) $\frac{1}{4}$ (ii) $\frac{3}{4}$ (iii) $\frac{1}{2}$ (iv) $\frac{3}{8}$

A. $\frac{1}{4}$

B. $\frac{3}{4}$

C. $\frac{1}{2}$

D. $\frac{3}{8}$

Answer: A

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26. If A, B, C are three mutually exclusive and exhaustive events of an experiment such that 4P(A) = 3P(B)=2P(C), then P(B) is equal to (i) $\frac{1}{13}$ (ii) $\frac{2}{13}$ (iii) $\frac{3}{13}$ (iv) $\frac{4}{13}$

A. $\frac{1}{13}$

B. $\frac{2}{13}$

C. $\frac{3}{13}$

D. $\frac{4}{13}$

Answer: D

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27. In a large metropolitan area, the probabilities are 0.87, 0.36, 0.30 that a family (randomly chosen for a sample survey) owns a

colour T.V., a black and white T.V. or both kinds of T.V. The probability that a family own either any one or both kinds of T.V. sets is

A. 0.87

B. 0.93

C. 0.85

D. 0.76

Answer: B

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28. The probability of an event A occurring is 0.5 and of B is 0.3. If A and B are mutually exclusive events then the probability of neither A nor B occurring is

A. 0.2

B. 0.3

C. 0.5

D. 0.8

Answer: A

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29. The probability that atleast one of the events A and B occurs is 0.6. If A and B occur simultaneously with probability 0.2, then $P(\overline{A}) + P(\overline{B})$ is

A. 0.4

B. 0.8

C. 1.2

D. 1.6

Answer: C

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30. A bag contains 150 nuts and 50 bolts. Half of the bolts and half of the nuts are rusted. One item is drawn at random from the bag. The probability that it is either rusted or a bolt is

A. $\frac{3}{8}$

B. $\frac{5}{8}$

C. $\frac{1}{4}$

D. $\frac{1}{2}$

Answer: B

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31. A and B are two mutually exclusive events of an experiment: If P(not A) = 0.65, $P(A \cup B) = 0.65$ and P(B) = p, then the value of p is

A. 0.35

B. 0.25

C. 0.30

D. 0.40

Answer: C

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32. Three numbers are chosen at random from the first 20 natural numbers. The probability that their product is even is

A. $\frac{2}{19}$

B. $\frac{4}{19}$

C. $\frac{9}{19}$

D. $\frac{17}{19}$

Answer: A

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33. Three numbers are chosen at random from the first 20 natural numbers. The probability that they are not consecutive is

A. $\frac{187}{190}$

B. $\frac{93}{95}$

C. $\frac{94}{95}$

D. $\frac{3}{190}$

Answer: A

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34. Four digit numbers are formed using the digits 0, 2, 3,5 without repetition. The probability of such a number divisible by 5 is

A. $\frac{1}{5}$

B. $\frac{4}{5}$

C. $\frac{1}{30}$

D. $\frac{5}{9}$

Answer: D

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35. If A and B are mutually exclusive events, then

A. $P(B) \leq P(\overline{A})$

B. $P(B) \geq P(\overline{A})$

C. $P(B) = P(\overline{A})$

D. none of these

Answer: A

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36. The probability that a student will pass his examination is 0.73, the probability of the student getting a compartment is 0.13. The

probability that student will either pass or get compartment is

A. 0.96

B. 0.86

C. 0.6

D. 0.14

Answer: B

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Exercise 22 A

1. What is random motion? Give an example.

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2. What is the resulting sample space if

one coins is tossed ,

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3. What is the resulting sample space if

Two coins are tossed simultaneously ,

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4. What is the resulting sample space if

three coins are tossed simultaneously ,

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5. Describe the sample space of this experiment :

(i) One die is rolled.

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6. Describe the sample space of this experiment :

Two dice are rolled .

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7. Descibe the sample space :

A coin is tossed twice . If the second thrown If the second throw results in a tail , a die is thrown.

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8. Descibe the sample space :

A coin is tossed twice . If it results in a head , a die is thrown , otherwise a coin is tossed .

Watch Video Solution

9. Descibe the sample space :

A coin is tossed . If it results in a head , a die is thrown . If the die is shown up an even number the die is thrown again.

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10. A five - sided spinner is spun and a coin is tossed. Show the combined outcomes in a space diagram.

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11. A five - sided spinner is spun and a coin is tossed.

List the combined outcomes and state the number of equally likely combined outcomes .

Watch Video Solution

12. In a bag there are three balls , one red , one blue and one yellow. A ball is selected ,the colour is recorded and the ball is replaced. A

second ball is then selected and the colour is recorded.

Show in a tree diagam all the possible combined outcomes .

Watch Video Solution

13. In a bag there are three balls , one red , one blue and one yellow. A ball is selected ,the colour is recorded and the ball is replaced. A second ball is then selected and the colour is recorded.

Show in a tree diagam all the possible combined outcomes .

Watch Video Solution

14. Satish and Mukesh who live in London wish to go on a holiday to France . They can travel to the coast by car , coach or train , and then cross the channel by ferry , train , helicopter or hovercraft.

In a space diagram and in a tree diagram show

all the combined outcomes of the different ways they could travel to France.

Watch Video Solution

15. Satish and Mukesh who live in London wish to go on a holiday to France . They can travel to the coast by car , coach or train , and then cross the channel by ferry , train , helicopter or hovercraft.

How many different ways could they travel ?

Watch Video Solution

16. From a group of 2 men and 3 women , two persons are selected . Describe the sample space of the experiment , if E is the event in which one man and one women are selected , then which are the cases favourable to E?

Watch Video Solution

17. A coin is tossed . If it results in a head , a coin is tossed , otherwise a die is thrown .

Describe the following events :

A : getting at least one head ,

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18. A coin is tossed . If it results in a head , a coin is tossed , otherwise a die is thrown . Describe the following events :

B : getting even number ,

Watch Video Solution

19. A coin is tossed . If it results in a head , a coin is tossed , otherwise a die is thrown . Describe the following event :

Getting a tail

Watch Video Solution

20. A coin is tossed . If it results in a head , a coin is tossed , otherwise a die is thrown . Describe the following events :

D : getting a tail and an odd number .

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21. A coin and a die are tossed . Describe the following events .

A : getting a head even number ,

Watch Video Solution

22. A coin and a die are tossed . Describe the following events .

B : getting a prime number ,

Watch Video Solution

23. A coin and a die are tossed . Describe the following events .

C : getting a tail and an even number ,

Watch Video Solution

24. A coin and a die are tossed . Describe the following events .

D : getting a head or a tail.

Watch Video Solution

25. A fair coin is tossed . If it shows a head , we draw a ball from a bag consisting of 3 distinct red and 4 distinct black balls if it shows a tail , we throw a fair die. Draw a tree diagram to show all the possible outcomes and obtain the sample space . What are sets representing the following events : (i) the ball drawn is black , (ii) the coin shows tail .

Watch Video Solution

26. Two die are rolled . A is the event that the sum of the numbers shown on the two dice is 5.B is the event that at least one of the dice shows up a 3. are the two events A and B (i) mutually exclusive , (ii) exhaustive ? Give arguments in support of your answer .

Watch Video Solution

Exercise 22 B

1. What is the probability of getting :

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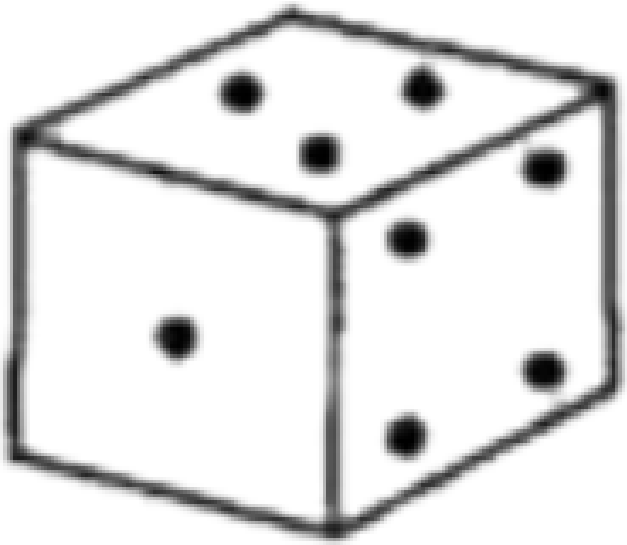
2. What is the probability of getting :



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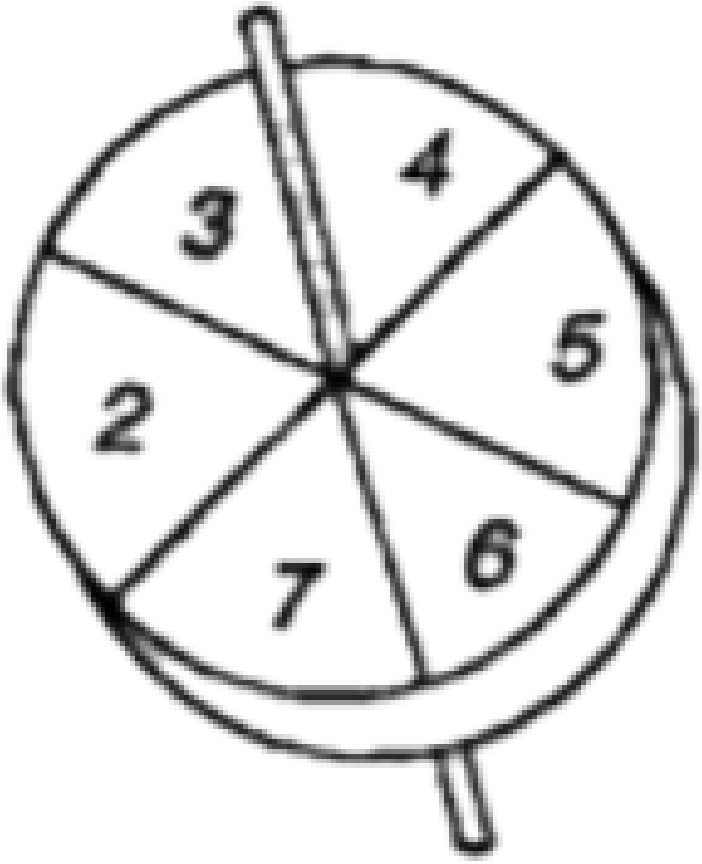
3. What is the probability of getting a prime number:



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4. Remesh choose a date at random in April for a party . Calculate the probability that he chooses :

a Saturday or a Sunday .

Watch Video Solution

5. Remesh choose a date at random in April for a party . Calculate the probability that he

chooses :

a Sunday

Watch Video Solution

6. Remesh choose a date at random in April for a party . Calculate the probability that he chooses :

a Saturday or a Sunday .

Watch Video Solution

7. A normal die is rolled . Calculate the probability that the number on the uppemost face when it stops rolling will be

5

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8. A normal die is rolled . Calculate the probability that the number on the uppemost face when it stops rolling will be $(\text{ not } 5)$

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9. A normal die is rolled . Calculate the probability that the number on the uppermost face when it stops rolling will be $an\ odd$ number

Watch Video Solution

10. A normal die is rolled . Calculate the probability that the number on the uppemost face when it stops rolling will be

a prime number

Watch Video Solution

11. A normal die is rolled . Calculate the probability that the number on the uppemost face when it stops rolling will be a 3 or a 4

Watch Video Solution

12. A normal die is rolled . Calculate the probability that the number on the uppermost face when it stops rolling will be

1 or 2 or 3 or 4.

Watch Video Solution

13. Nine playing cards are numbered 2 to 10 . A card is selected from them at random .Calculate the probability that the card will be an odd number

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14. Nine playing cards are numbered 2 to 10 . A card is selected from them at random .Calculate the probability that the card will be a multiple of 4.

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15. Nine counters numbered 2 to 10 are put in a bag . One counter is selected at random . What is the probility of getting a counter with

:

a number 5

Watch Video Solution

16. Nine counters numbered 2 to 10 are put in a bag . One counter is selected at random . What is the probility of getting a counter with :

an odd number

Watch Video Solution

17. Nine counters numbered 2 to 10 are put in a bag . One counter is selected at random . What is the probility of getting a counter with :

not an odd number

 Watch Video Solution

18. Nine counters numbered 2 to 10 are put in a bag . One counter is selected at random . What is the probility of getting a counter with

:

a prime number

Watch Video Solution

19. Nine counters numbered 2 to 10 are put in a bag . One counter is selected at random . What is the probility of getting a counter with :

a square number

Watch Video Solution

20. Nine counters numbered 2 to 10 are put in a bag . One counter is selected at random . What is the probility of getting a counter with :

a multiple of 3 ?

Watch Video Solution

21. A die is rolled . If the outcome is an even number , what is the probability it is a prime number .

Watch Video Solution

22. A bag contains 20 coloured balls . 8 are red , 6 are blue ,3 are green ,2 are white and 1 is brown. A ball is chosen at random from the bag . What is the probability that ball chosen is :

blue

 Watch Video Solution

23. A bag contains 20 coloured balls . 8 are red , 6 are blue ,3 are green ,2 are white and 1 is brown. A ball is chosen at random from the bag . What is the probability that ball chosen is :

not blue

Watch Video Solution

24. A bag contains 20 coloured balls . 8 are red , 6 are blue ,3 are green ,2 are white and 1 is

brown. A ball is chosen at random from the bag . What is the probability that ball chosen is :

brown

Watch Video Solution

25. A bag contains 20 coloured balls . 8 are red , 6 are blue ,3 are green ,2 are white and 1 is brown. A ball is chosen at random from the bag . What is the probability that ball chosen

is :

not brown

26. A bag contains 20 coloured balls . 8 are red , 6 are blue ,3 are green ,2 are white and 1 is brown. A ball is chosen at random from the bag . What is the probability that ball chosen is :

blue or red

27. A bag contains 20 coloured balls . 8 are red , 6 are blue ,3 are green ,2 are white and 1 is brown. A ball is chosen at random from the bag . What is the probability that ball chosen is :

red or green

Watch Video Solution

28. A bag contains 20 coloured balls . 8 are red , 6 are blue ,3 are green ,2 are white and 1 is

brown. A ball is chosen at random from the bag . What is the probability that ball chosen is :

green or white or brown ?

Watch Video Solution

29. A bag contains 20 balls . These are of three different colours : green red and blue .A ball is chosen at random from the bag . The probability of a green ball is $\frac{1}{4}$. The

probability of a red ball is $\frac{2}{5}$.

What is the probability of a blue ball ?

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30. A bag contains 20 balls . These are of three different colours : green red and blue .A ball is chosen at random from the bag . The probability of a green ball is $\frac{1}{4}$. The probability of a red ball is $\frac{2}{5}$.

How many balls are red ?

Watch Video Solution

31. A bag contains 20 balls . These are of three different colours : green red and blue .A ball is chosen at random from the bag . The probability of a green ball is $\frac{1}{4}$. The probability of a red ball is $\frac{2}{5}$.

How many balls are green ?

Watch Video Solution

32. A bag contains 20 balls . These are of three different colours : green red and blue .A ball is

chosen at random from the bag . The probability of a green ball is $\frac{1}{4}$. The probability of a red ball is $\frac{2}{5}$.

How many balls are blue ?

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33. A pair of dice is thrown . Find the probability of getting a sum of 10 or more , if 5 appears on the first die .

Watch Video Solution

34. A match can be won , drawn or lost One week a school it to play two matches .Draw a tree diagram to show all the possible outcomes and list them . If the outcomes are equally likely ,calculate the probability that , both matches are won ,

35. A match can be won , drawn or lost One week a school it to play two matches .Draw a tree diagram to show all the possible

outcomes and list them . If the outcomes are equally likely ,calculate the probability that , both matches are won ,

Watch Video Solution

36. A match can be won , drawn or lost One week a school it to play two matches .Draw a tree diagram to show all the possible outcomes and list them . If the outcomes are equally likely ,calculate the probability that , at least one match is drawn ,

Watch Video Solution

37. A match can be won , drawn or lost One week a school it to play two matches .Draw a tree diagram to show all the possible outcomes and list them . If the outcomes are equally likely ,calculate the probability that , no match is lost ,

Watch Video Solution

38. A match can be won , drawn or lost One week a school it to play two matches .Draw a tree diagram to show all the possible outcomes and list them . If the outcomes are equally likely ,calculate the probability that , both matches are won ,

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39. The ace , king, queen , jack and ten from both the spades and hearts suits are placed in

two separate piles and one card is taken from each pile : draw the sample space diagram and find the probability that :

both cards will be kings ,

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40. The ace , king queen , jack and ten from both the spades and hearts suits are placed in two separate piles and one card is taken from each pile. Draw the sample space diagram and

find the probability that both cards will be a pair.

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41. The ace , king queen , jack and ten from both the spades and hearts suits are placed in two separate piles and one card is taken from each pile : draw the sample space diagram and find the probability that at least one card will be an ace ,

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42. The ace , king queen , jack and ten from both the spades and hearts suits are placed in two separate piles and one card is taken from each pile. Draw the sample space diagram and find the probability that neither card will be a 10.

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43. The ace , king queen , jack and ten from both the spades and hearts suits are placed in

two separate piles and one card is taken from each pile. Draw the sample space diagram and find the probability that neither card will be a king or jack.

Watch Video Solution

44. A small pack of cards consists of the Ace, King, Queen, Jack and ten of all four suits. Find the probability of selecting the Queen of spades.

Watch Video Solution

45. The ace , king queen , jack and ten from both the spades and hearts suits are placed in two separate piles and one card is taken from each pile : draw the sample space diagram and find the probability that : both cards will be hearts.

Watch Video Solution

Exercise 22 C

1. A die is thrown once . Find

P(an ace),

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2. A die is thrown once . Find

P(an even number),

 Watch Video Solution

3. A die is thrown once . Find

P(a number < 3),

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4. A die is thrown once . Find

P(a number ≥ 4),

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5. A die is thrown once . Find

P(a number < 7),

Watch Video Solution

6. A die is thrown once . Find

P(a number > 8).

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7. A card is drawn from a well shuffled pack of 52 cards . Find the probability of

an ace

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8. A card is drawn from a well shuffled pack of 52 cards . Find the probability of

a spade

 Watch Video Solution

9. A card is drawn from a well shuffled pack of 52 cards . Find the probability of

a black card

Watch Video Solution

10. A card is drawn from a well shuffled pack of 52 cards . Find the probability of

a face card

Watch Video Solution

11. A card is drawn from a well shuffled pack of 52 cards . Find the probability of

jack , queen or king

 Watch Video Solution

12. A card is drawn from a well shuffled pack of 52 cards . Find the probability of

3 of heart or diamond.

 Watch Video Solution

13. One card is draw from a pack of 52 cards being equally likely to be drawn . Find the probability of

the card to be red

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14. One card is draw from a pack of 52 cards being equally likely to be drawn . Find the probability of

the card drawn to be a king

Watch Video Solution

15. One card is draw from a pack of 52 cards being equally likely to be drawn . Find the probability of

the card drawn to be red and a king

Watch Video Solution

16. One card is draw from a pack of 52 cards being equally likely to be drawn . Find the

probability of

the card drawn to be either red or a king .

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17. A book contains 100 pages . A page is chosen at random . What is the chance that the sum of digits on the page is equal to 9 ?

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18. From 25 tickets , marked with the first 25 numberals , one is drawn at random . Find the probalility that

it is a multiple of 5 or 7

Watch Video Solution

19. From 25 tickets , marked with the first 25 numberals , one is drawn at random . Find the probalility that

it is a multiple of 3 or 7.

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20. What is the probability that a number selected from the numbers 1,2,3,...25 is a prime number ? You may assume that each of the 25 numbers is equally likely to be selected .

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21. In a simultaneous throw of two coins find the probability of

two heads ,

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22. In a simultaneous toss of two coins, find the probability of getting: exactly one tail

Watch Video Solution

23. In a simultaneous throw of two coins find the probability of

at least one tail .

Watch Video Solution

24. In a single throw of two dice , find the probability of getting a total of 10 or 11.

Watch Video Solution

25. Two dice are thrown. Find the probability of getting an odd number on the first die and a multiple of 3 on the other.

Watch Video Solution

26. Find the probility of getting a sum as 6 when two dice are thrown simultaneously .

Watch Video Solution

27. Two dice are thrown simultaneously . Find the probability of getting a multiple of 3 as the sum .

Watch Video Solution

28. Find the probability of getting the sum as a prime number when two dice are thrown together.

 Watch Video Solution

29. In a single throw of two dice , find the probabililty of throwing

a number $>$ 4 on each die ,

 Watch Video Solution

30. Two dice are thrown.Find the probability of an odd number on one die and 5 on the other

 Watch Video Solution

31. Two dice are rolled simultaneously. Find the probability of :

getting a multiple of 2 on one dice and a multiple of 3 on the other dice.

 Watch Video Solution

32. Two dice are thrown simultaneously. Find the probability of getting an even number as the sum

 Watch Video Solution

33. Two dice are thrown simultaneously. Find the probability of getting an odd number as the sum.

 Watch Video Solution

34. In a single throw of two dice , what is the probability of

two aces

 Watch Video Solution

35. In a single throw of two dice , what is the probability of

at least one ace

 Watch Video Solution

36. In a single throw of two dice , what is the probability of

doublets ?

Watch Video Solution

37. In a single throw of two dice , what is the probability of

a total less than 10

Watch Video Solution

38. In a single throw of two dice , what is the probability of

a total of 11

Watch Video Solution

39. In a single throw of two dice , what is the probability of

a total of 12

Watch Video Solution

40. In a single throw of two dice , what is the probability of

a total of at least 10 .

 Watch Video Solution

41. In a single throw of two dice , what is the probability of

a doublet of even number

 Watch Video Solution

42. Find the probability of product of a perfect square when 2 dice are thrown together.

Watch Video Solution

43. In a single throw of thee dice, find the probability of getting a total of 17 or 18.

Watch Video Solution

44. In a single throw of three dice, determine the probability of getting i. total of 5 ii. total of at most 5 ii. a total of at least 5.

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45. In a single throw of three dice, determine the probability of getting i. total of 5 ii. total of at most 5 ii. a total of at least 5.

Watch Video Solution

46. In a single throw of three dice, determine the probability of getting i. total of 5 ii. total of at most 5 ii. a total of at least 5.

Watch Video Solution

47. In a single throw of three dice , find the probability of getting

the same number on all the dice

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48. In a single throw of three dice , find the probability of

not getting the same number on all the dice .

Watch Video Solution

49. There are four events $E_1, E_2, E_3,$ and E_4 one of which must and only one can happen The odds are $2:5$ in favour of $E_1, 3:4$ in favour of E_2 and $1:3$ in favour of E_3 . Find the odds against E_4.

Watch Video Solution

50. In simultaneous toss of 4 coins , what is the probability of getting exactly 3 heads ?

Watch Video Solution

Exercise 22 D

1. Four digit numbers are formed by using the digits 1,2,3,4 and 5 without repeating the digit. Find the probability that a number , chosen at random , is an odd number.

Watch Video Solution

2. What is the probability of getting 3 white balls in a draw of 3 balls from a box containing 6 white and 4 red balls ?

Watch Video Solution

3. A bag contains 6 white ., 7 red and 5 black balls . Three balls are drawn at random . Find the probability that they will be white .

Watch Video Solution

4. A bag contains 2 white marbles , 4 blue marbels , and 6 red marbles . A marble is drawn at random from the bag . What is the probability that

it is white ?

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5. A bag contains 2 white marbles , 4 blue marbels , and 6 red marbles . A marble is

drawn at random from the bag . What is the probability that

it is blue ?

Watch Video Solution

6. A bag contains 2 white marbles , 4 blue marbels , and 6 red marbles . A marble is drawn at random from the bag . What is the probability that

it is red ?

Watch Video Solution

7. A bag contains 2 white marbles , 4 blue marbels , and 6 red marbles . A marble is drawn at random from the bag . What is the probability that

it is white ?

Watch Video Solution

8. A bag contains 2 white marbles , 4 blue marbels , and 6 red marbles . A marble is drawn at random from the bag . What is the

probability that

it is not blue ?

Watch Video Solution

9. A bag contains 2 white marbles , 4 blue marbels , and 6 red marbles . A marble is drawn at random from the bag . What is the probability that

it is black ?

Watch Video Solution

10. A bag contains 9 marbles, 3 of which are red, 3 of which are blue, and 3 of which are yellow. Three marbles are drawn from the bag . What is the probability that they are all blue ?

Watch Video Solution

11. A bag contains 9 marbles, 3 of which are red, 3 of which are blue, and 3 of which are yellow. Three marbles are drawn from the bag . What is the probability they are all red ?

Watch Video Solution

12. A bag contains 9 marbles, 3 of which are red, 3 of which are blue, and 3 of which are white. Three marbles are drawn from the bag . What is the probability that they are all white ?

Watch Video Solution

13. A bag contains 2 Red, 3 Green and 2 Blue balls. Two balls are drawn randomly from the

bag What is the probability that

none of then is red ?

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14. 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 red ?

Watch Video Solution

15. A bag contains 2 white marbles, 4 blue marbles and 6 red marbles. Three marbles are drawn from the bag . What is the probability that

none is black ?

 Watch Video Solution

16. Two balls are drawn from an urn containing 2 white , 3 red and 4 black balls , one by one without replacement . What is the probability

that

both balls are of the same colour ,

Watch Video Solution

17. Two balls are drawn from an urn containing 2 white , 3 red and 4 black balls , one by one without replacement . What is the probability that

at least one ball is red ?

Watch Video Solution

18. From a pack of 52 playing cards, three cards are drawn at random. Find the probability of drawing a king, a queen and a knave.

Watch Video Solution

19. Two cards are drawn at random from 8 cards numbered from 1 to 8 . What is the probability that the sum of the numbers is odd , if the two cards are drawn together ?

Watch Video Solution

20. Two cards are drawn at random from a pack of 52 cards. What is the probability that both the drawn cards are aces?

Watch Video Solution

21. From a pack of 52 cards , 3 cards are drawn at random . Find the probability of drawing exactly two aces .

Watch Video Solution

22. Three cards are drawn at a time at random from a well shuffled [ack of 52 cards . Find the probability that all the three cards have same number .

Watch Video Solution

23. Two cards are drawn from a well shuffled pack of cards without replacement . Find the probability that neither a Jack nor a card of spades is drawn .

Watch Video Solution

24. Three cards are drawn from a deck of 52 cards . What is the probability that they are all spades ?

Watch Video Solution

25. Three cards are drawn from a deck of 52 cards . What is the probability that they are all red cards ?

Watch Video Solution

26. Three cards are drawn from a deck of 52 cards . What is the probability that none of them is a club ?

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27. Three cards are drawn from a deck of 52 cards . What is the probability that all of them are aces ?

Watch Video Solution

28. Three cards are drawn from a deck of 52 cards . What is the probability that they are all spades ?

 Watch Video Solution

29. Three cards are drawn from a deck of 52 cards . What is the probability that they are all red cards ?

 Watch Video Solution

30. the probability that three cards drawn from a pack of 52 card what are the probability that none is a club ,

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31. Three cards are drawn from a deck of 52 cards . What is the probability that all of them are diamonds

Watch Video Solution

32. One cards is drawn from a pack of 52 cards , each of the 52 cards being equally like to be drawn . Find the probability that the card drawn is

an ace

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33. One cards is drawn from a pack of 52 cards , each of the 52 cards being equally like to be drawn . Find the probability that the card

drawn is

red

Watch Video Solution

34. One cards is drawn from a pack of 52 cards , each of the 52 cards being equally like to be drawn . Find the probability that the card drawn is

either red or king

Watch Video Solution

35. One cards is drawn from a pack of 52 cards , each of the 52 cards being equally like to be drawn . Find the probability that the card drawn is

red and a king.

 Watch Video Solution

36. Four cards are drawn at random from a pack of 52 playing cards , Find the probability of getting

all the four cards of the same suit

Watch Video Solution

37. Four cards are drawn at random from a pack of 52 playing cards , Find the probability of getting

all the four cards of the same number ,

Watch Video Solution

38. Four cards are drawn at random from a pack of 52 playing cards , Find the probability

of getting

one card from each suit ,

 Watch Video Solution

39. Four cards are drawn at random from a pack of 52 playing cards , Find the probability of getting

two red cards and two black cards ,

 Watch Video Solution

40. Four cards are drawn at random from a pack of 52 playing cards , Find the probability of getting

all cards of the same colour ,

Watch Video Solution

41. Four cards are drawn at random from a pack of 52 playing cards , Find the probability of getting

all face cards , (king , Queen , jack)

Watch Video Solution

42. Four cards are drawn at random from a pack of 52 playing cards. Find the probability of getting four honours of the same suit.

Watch Video Solution

43. In a lottery of 50 tickets numbered 1 to 50 , two tickets are drawn simultaneously . Find the probability that

both the tickets drawn have prime numbers ,

Watch Video Solution

44. In a lottery of 50 tickets numbered 1 to 50 , two tickets are drawn simultaneously . Find the probability that

none of the tickets drawn has prime number ,

Watch Video Solution

45. In a lottery of 50 tickets numbered 1 to 50 , two tickets are drawn simultaneously . Find

the probability that

a tickets has prime number.

Watch Video Solution

46. Out of 9 outstanding students in a college, there are 4 boys and 5 girls. A team of four students is to be selected for a quiz programme. Find the probability that two are boys and two are girls.

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47. Four people are chosen at random from a group consisting of 3 men , 2 women , and 3 children. Find the probability that out of four chosen people , exactly 2 are children ?

Watch Video Solution

48. A commitree of 5 principals is to be selected from a group of 6 gent principals and 8 lady principals. If the selection is made randomly , find the probability that there are 3 lady principals and 2 gent principals .

Watch Video Solution

49. A bag contains tickets numbered 1 to 20 . Two tickets are drawn . Find the probability that both numbers are odd .

Watch Video Solution

50. A bag contains tickets numbered 1 to 30. Three tickets are drawn at random from the

bag. What is the probability that the maximum number on the selected tickets exceeds 25?

Watch Video Solution

51. A room has 3 lamps . From a collection of 10 light bulbs of which 6 are no good , a person selects 3 at random and puts them in a socket . What is the probability , that he will have light ?

Watch Video Solution

52. A has 3 shares in a lottery containing 3 prizes and 9 blanks , B has two shares in lottery containing 2 prizes and 6 blanks , Copare their chances of success .

Watch Video Solution

53. There are n letters and n addressed envelopes . If the letters are placed in the envelopes at random , what is the probability that all the letters are not placed in the right evelope ?

Watch Video Solution

54. Three letters are written to different persons , and the addresses on the three envelopes are also written . Without looking at the addresses , find the probability that the letters go into the right envelopes .

Watch Video Solution

55. The letters of SOCIETY are placed at random in a row. What is the probability that three vowels come together?

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56. In a random arrangement of the letters of the "COMMERCE" , find the probability that all vowels come together.

Watch Video Solution

57. Given a group of 4 persoms , find the probability that

no two of them have their birthdays on the same day of the week,

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Exercise 22 E

1. Sameer throws , an ordinary die . What is the probability that he throws

2

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2. Sameer throws , an ordinary die . What is the probability that he throws

5

Watch Video Solution

3. Sameer throws , an ordinary die . What is the probability that he throws

2 or 5 ?

Watch Video Solution

4. Kavita draws a card from a pack of cards . What is the probability that she draws

a heart

Watch Video Solution

5. Kavita draws a card from a pack of cards . What is the probability that she draws

a club

Watch Video Solution

6. Kavita draws a card from a pack of cards . What is the probability that she draws a heart or a spade ?

Watch Video Solution

7. Anurag draws a card from a pack of cards . What is the probability that he draws one of following numbers ?

3

Watch Video Solution

8. Anurag draws a card from a pack of cards . What is the probability that he draws one of following numbers ?

7

Watch Video Solution

9. Anurag draws a card from a pack of cards . What is the probability that he draws one of

following numbers ?

3 or 7

Watch Video Solution

10. A letter is chosen at random from the letters in the word PROBABILITY . What is the probability that tha letter will be

B

Watch Video Solution

11. A letter is chosen at random from the letters in the word PROBABILITY . What is the probability that tha letter will be

a vowel

Watch Video Solution

12. A letter is chosen at random from the letters in the word PROBABILITY . What is the probability that tha letter will be B or vowel ?

Watch Video Solution

13. A bag contains 7 white balls ,9 green balls and 10 yellow balls . A ball is drawn at random from the bag . What is the probability that it will be

white

 Watch Video Solution

14. A bag contains 7 white balls ,9 green balls and 10 yellow balls . A ball is drawn at random from the bag . What is the probability that it

will be

green

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15. A bag contains 7 white balls ,9 green balls and 10 yellow balls . A ball is drawn at random from the bag . What is the probability that it will be

green or white

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16. A bag contains 7 white balls ,9 green balls and 10 yellow balls . A ball is drawn at random from the bag . What is the probability that it will be

not yellow

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17. A bag contains 7 white balls ,9 green balls and 10 yellow balls . A ball is drawn at random from the bag . What is the probability that it

will be

neither yellow nor green ?

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18. Suyash needs his calculator for his mathematics lesson . It is either in his pocket , bag or locker . The probability it is in his pocket is 0.20 , the probability it is in his bag is 0.58 . What is the probability that he will have the calculator for the lesson,

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19. Suyash needs his calculator for his mathematics lesson . It is either in his pocket , bag or locker . The probability it is in his pocket is 0.20 , the probability it is in his bag is 0.58 . What is the probability that it is in his locker ?

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20. A spinner has numbers and colours on it , as shown in the diagram . Their probabilities

are given in the tables . When the spinner is spun what is the probability of each of the following ?

red or $green$

Red	0.5
Green	0.25
Blue	0.25

1	0.4
2	0.35
3	0.25

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21. A spinner has four colours as shown in the figure. When we spin it once, find a) At which colour, is the pointer more likely to stop? b) At

which colour, is the pointer less likely to stop?

c) At which colours, is the pointer equally likely to stop? d) What is the chance the pointer will stop on white? e) Is there any colour at which the pointer certainly stops?

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22. A spinner has numbers and colours on it , as shown in the diagram . Their probabilities are given in the tables . When the spinner is spun what is the probability of each of the

following ?

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3 or green

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23. A spinner has numbers and colours on it , as shown in the diagram . Their probabilities are given in the tables . When the spinner is spun what is the probability of each of the following ?

Red	0.5
Green	0.25
Blue	0.25

1	0.4
2	0.35
3	0.25

2 or green

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24. A spinner has numbers and colours on it , as shown in the diagram . Their probabilities are given in the tables . When the spinner is spun what is the probability of each of the following ?

red or $green$

Red	0.5
Green	0.25
Blue	0.25

1	0.4
2	0.35
3	0.25

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Exercise 22 F

1. In a single throw of two coins , find the probability of getting both heads or both tails .

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2. A die is thrown twice . Find the probability that the sum of the two numbers obtains is 5 or 7?

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3. Two dice are tossed once . Find the probability of getting an even number on first die or a total of 8.

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4. If the probabiliy of a horse A winning a race is $\frac{1}{5}$ and the probability of horse B winning the same race is $\frac{1}{4}$, what is the probability that one of the horses will win ?

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5. In a single throw of two dice , what is the probability of obtaining a total of 9 or 11 ?

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6. In a group there are 2 men and 3 women ,3 persons are selected at random from the group . Find the probability that 1 man and 2 women or 2 men and 1 women are selected .

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7. In a class of 25 students with roll numbers 1 to 25 , a students is pecked up at random to answer a question .Find students with roll numbers 1 to 25 , a student is picked up at random to answer a question . Find the

probability that roll number of the selected students is either a multiple of 5 or 7.

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8. If chance of A , winning a certain race be $\frac{1}{6}$ and the chance of B winning it is $\frac{1}{3}$, what is the chance that neither should win ?

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9. Discuss and critise the following : $P(A)=\frac{2}{3}, P(B)=\frac{1}{4}, P(C)=\frac{1}{3}$ are the probilities of three mutually exclusive events A,B and C.

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10. E and F are two events associated with a random rxperiment for which P(F)=0.35,P(E or F) =0.85,P(E and F)=0.15 Find P€.

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11. Two events A and B have probabilities 0.25 and 0.50 respectively.The probability that both A and B occur simultaneously is 0.1 .Find the probability that neither A nor B occurs .

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12. The probability of an event A occuring is 0.5 and of B is 0.3 If A and B are mutually exclusive events , then find the probability of neither A nor B occurring.

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13. A box contains 25 tickets numbered 1 to 25 Two tickets are drawn at random . What is the probability that the product of the numbers is even ?

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14. A bag contains 7 white, 5 black and 4 red balls. Four balls are drawn without

replacement find the probability that t least three balls are black.

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15. A and B are two mutually exclusive events of an experiment: If P(not A) = 0.65, $P(A \cup B) = 0.65$ and P(B) = p, then the value of p is

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16. A and B are three mutually exclusive events . If $P(A) = 0.5$ and $P(\overline{B}) = 0.6$,find P(A or B).

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17. A,B and C are three mutually exclusive events associated with a random experiment . Find P(A) given that $P(B) = \frac{3}{2}P(A)$ and $P(C) = \frac{1}{2}P(B)$.

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18. An experiment yields 3 mutually exclusive and exclusive events A, B and C . If $P(A) = 2P(B) = 3P(C)$, then $P(A)$ is equal to

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19. In a single throw of two dice, find the probability that neither a doublet nor a total of 9 will appear.

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20. Two unbiased dice are thrown . Find the probability that the sum of the numbers obtained on the two dice is neither a multiple of 3 nor a multiple of 4.

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21. Two dice are thrown together , what is the probabability that the sum of the numbers on the two faces is neither divisible by 3 nor by 5.

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22. In a given race , the odds in favour of horses A,B,C and D are 1 : 3 , ,1 : 4, 1 : 5 and 1 : 6 respectively. Find the probability that one of them wins the race .

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23. 100 students appeared for two examinations .60 passed the first , 50 passed the second and 30 passed both . Find the

probability that a student selected at random has failed in both examinations .

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24. A card is drawn from a deck of 2 cards. Find the probability of getting an ace or a spade card.

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25. From a well shuffled deck of 52 cards, 4 cards are drawn at random. What is the probability that all the drawn cars are of the same colour.

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26. A card is drawn at random from a well shuffled pack of cards . What is the probability that it is a heart or a queen ?

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27. A card is drawn at random from a well-shuffled pack of 52 cards. Find the probability that it is neither a king nor a heart.

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28. If a card is drawn from a deck of 52 cards, then find the probability of getting a king or a heart or a red card.

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29. There Are Three Events A, B, C One of Which Must and Only One Can Happen, the Odds Are 8 to 3 Against A, 5 to 2 Against B. Find the Odds Against C.

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30. In a group of students , there are 3 boys and 3 girls . Four students are to be selected at random from the group . Find the

probability that either 3 boys and 1 girl or 3 girls and 1 boy are selected .

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Chapter Test

1. In rolling two fair dice , what is the probability of obtaining of obtaining a sum greater than 3 but not exceeding 6 ?

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2. Find the probability of obtaining a sum 8 in a single throw of two dice.

3. A bag contains 4 red , 6 white and 5 black balls 2 balls are drawn at random . Find the probability of getting one red and one white ball .

4. Out of 26 cards numbered from 1 to 26 , one card is chosen . Find the probability that it is not divisible by 4.

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5. If A and B are mutually exclusive events with $P(A) = \frac{1}{2}P(B)$ and $A \cup B = S$, the sample space .find P(A).

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6. A and B are events such that $P(A) = 0.42$, $P(B) = 0.48$and $P(AandB) = 0.16$.

Determine (i) P(not A), (ii) P(not B) and (iii) P(A or B)

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