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## MATHS

# BOOKS - RD SHARMA MATHS <br> <br> (ENGLISH) 

 <br> <br> (ENGLISH)}

## PROBABILITY

## Others

1. In the given figure, $\mathrm{A}, \mathrm{B}, \mathrm{C}$ and D are centres
of four circles that have a radius of 1 unit. If a
point is selected at random from interior of square $A B C D$, then what is the probability that
it lies in the shaded region

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2. What is the probability that a number selected from the number $1,2,3 . \ldots ., 25$ is a prime number, when each of the given numbers is equally likely to be selected?

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3. One card is drawn from a pack of 52 cards, each of the 52 cards being equally likely to be drawn. Find the probability that the card drawn is: (i) an ace (ii) red (iii) either red or king (iv) red and a king.

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4. The king, queen and jack of clubs are removed from a deck of 52 playing cards and then well shuffled. One card is selected from the remaining cards. Find the probability of
getting i)a heart ii)a king iii)a club iv) the 10 of hearts

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5. From a pack of 52 playing cards Jacks, queens, kings and aces of red colour are removed. From the remaining, a card is drawn at random. Find the probability that the card drawn is : (i) a black queen (ii) a red card
(iii) a black jack
6. A piggy bank contains hundred 50 paise coins, fifty Rs. 1 coins, twenty Rs. 2 coins and ten Rs. 5 coins. If it is equally likely that one of the coins will fall out when the bank is turned upside down, find the probability that the coin which fell (i) will be a 50 paise coin (ii) will be of value more than Rs. 1 (iii) will be of value less than Rs. 5 (iv) will be a Rs. 1 or Rs. 2 coin.
7. All jacks, queens and kings are removed from a pack of 52 cards. The remaining cards are well-shuffled and then a card is randomly drawn from it. Find the probability that this card is (i) a black face card (ii) a red card

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8. The probability that an year chosen at random has 53 Sundays is :
9. Two unbiased coins are tossed simultaneously. Find the probability of getting
(i) two head (ii) one head one tail (iii) at least one head (iv) at most one head (v) no head

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10. Two dice are thrown. Find the probability of getting an odd number on the first die and a multiple of 3 on the other.
11. In the accompanying, diagram a fair spinner is placed at the centre $O$ of the circle, Diameter $A O B$ and radius $O C$ divide the circle into three rigions lebelled $X, Y a n d Z$. If
$\angle B O C=45^{\circ}$. What is the probability that the spinner will land in the region $X$ ?

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12. An unbiased die is thrown. What is the probability of getting: (i) an even number (ii)
a multiple of 3 (iii) an even number or a multiple of 3 (iv) an even number and a multiple of $3(\mathrm{v})$ a number 3 or $4(\mathrm{vi})$ an odd number (vii) a number less than 5 (viii) a number greater than 3 (ix) a number between 3 and 6

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13. All red face cards are removed from a pack of playing cards. The remaining cards are well
shuffled and then a card is drawn at random
from then. Find the probability that the drawn
card is (i)a red card (ii) a face card and (iii) a card of clubs.

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14. A square dart board is placed in the first quadrant from $x=0$ to $x=6$ and $y=0$ to
$y=6$. A triangular region on the dart board
is enclosed by the lines $y=2, x=6$ and
$y=x$. Find the probability that a dart that randomly hits the dart board will land in the triangular region formed by the three lines.

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15. In figure, a dart is thrown and lands in the interior of the circle. What is the probability that the dart will land in the shaded region?
16. Three unbiased coins are tossed together.

Find the probability of getting:
(i)all heads
(ii) two heads
(iii)one head
(iv) at least two heads

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17. A target shown in Figure, consists of three concentric circles of radii 3,7 and 9 cm
respectively. A dart is thrown and lands on the target. What is probability that the dart will and on the shaded region?

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18. Tickets numbered from 1 to 20 are mixed
up together and then a ticket is drawn at
random. What is the probability that the ticket has a number which is a multiple of 3 or 7 ?

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19. In a family of 3 children, the probability of having at least one boy is $\frac{7}{8}$ (b) $\frac{1}{8}$ (c) $\frac{5}{8}$ (d) $\frac{3}{4}$

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20. Find the probability that a number selected at random from the numbers $1,2,3, \ldots 35$
is a prime number
(ii) multiple of 7
(iii) a multiple of 3 or 5
21. In a simulataneous throw of a pair of dice, find the probability of getting: (i) 8 as the sum
(ii) a doublet (iii) a doublet
of prime numbers (iv) a doublet of odd numbers (v) a sum greater than 9 (vi) an
even number on first (vii) an even number on one and a multiple of 3 on the other (viii) neither 9 or 11 as the sum of the numbers on
the faces (ix) a sum less than 6
(x) a
sum less than 7 a sum more than 7
at least once (xiii) a number other than 5 on any dice (xiv) even number on each die (xv) 5
least once (xvii) 2 will not come either time

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22. A number is selected at random from the numbrs 3,5,5,7,7,7, 9,9,9,9. The probability that the selected number is their average is $\frac{1}{10}$ (b) $\frac{3}{10}$ (c) $\frac{7}{10}$ (d) $\frac{9}{10}$
23. The probability of guessing the correct answer to a certain test questions is $\frac{x}{12}$ If the probability of not guessing the correct answer to this question is $\frac{2}{3}$ then $x=(a) 2$ (b) 3 (c) 4 (d) 6

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24. Two dice are rolled one after the other.The probability that the number on the first dice is
smaller than that of the number on second dice is-

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25. A letter is chosen at random from the letters of the word ASSASSINATION. Find the probability that the chosen is (i)a vowel (ii) consonant.
26. A number x is selected from the numbers
$1,2,3$ and then a second number y is randomly
selected from the numbers $1,4,9$. What is the probability that the product xy of the two numbers will be less than 9 ?

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27. A jar contains 54 marbles each of which is
blue, green or white. The probability of selecting a blue marble at random from the jar
is $\frac{1}{3}$, and the probability of selecting a green marble at random is $\frac{4}{9}$. How many white marbles does the jar contain?

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28. It is know that a box of 600 electric bulbs
contains 12 defective bulbs. One bulb is taken
out at random from this box. What is the probability that it is a non-defective bulb?

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29. A bag contains 3 red and 2 blue marbles. A marble is drawn at random. What is the probability of drawing a blue marble?

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30. A bag contains 5 red balls, 8 white balls, 4 green balls and 7 black balls. If one ball is drawn at random, find the probability that it is: (i)black(ii) red(iii) not green
31. 17 cards numbered $1,2,3 \ldots . . ., 17$ are put in a box and mixed thoroughly. One person draws
a card from the box. Find the probability that the number on the card is: (i)odd (ii) a prime(iii) divisible by 3 (iv)divisible by 3 and 2 both

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32. In the Figure, a square dart board is shown.

The length of a side of the larger square is 1.5
times the length of a side of the smaller square. If a dart is thrown and lands on the larger square. What is the probability that it will land in the interior of the smaller square?

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33. Two numbers $a$ and $b$ are selected
successively without replacement in that order
from the integers 1 to 10.The probability that
$\frac{a}{b}$ is an integer, is

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34. If number $x$ is chosen fromthe numbers $1,2,3$, and a number $y$ is selected from the numbers $1,4,9$. Then, $P(x y<9)$

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35. A bag contains 5 red balls and some blue balls. If the probability of drawing a blue ball is double that of a red ball, find the number of blue balls in the bag.
36. A bag contains 12 balls out of which $x$ are white. If one ball is drawn at random, what is the probability that it will be a white ball? If 6 more white balls are put in the bag, the probability of drawing a white ball will be double than that in (i). Find $x$.

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37. Cards marked with the numbers 2 to 101
are placed in a box and mixed thoroughly. One
card is drawn from this box. Find the probability that the number on the card is: (i) an even number
(ii) a number less than 14

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38. Cards marked with the numbers 2 to 101 are placed in a box and mixed thoroughly. One card is drawn from this box. Find the
probability that the number on the card is: (i)
a number which is a perfect square (ii) a prime number less than 20.

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39. 1000 tickets of a lottery were sold and
there are 5 prizes on these tickets. If Saket has
purchased one lottery ticket, what is the probability of winning a prize?
40. A child has a block in the shape of a cube with one letter written on each face as shown below: (FIGURE) The cube is thrown once. What is the probability of getting (i) $A$ ? (ii) $D$ ?

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41. Savita and Hamida are friends. What is the probability that both will have (i) the same birthday? (ii) different birthdays? (ignoring a leap year).

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42. There are 40 students in class $X$ of a school of whom 25 are girls and 15 are boys.

The class teacher has to select one student as
a class representative. She writes the name of each student on a separate card, the cards being identical. Then she puts cards in a bag and stirs them thoroughly. She then draws one card from the bag. What is the probability that the name written on the card is the name of (i) a girl? (ii) a boy?

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43. A carton consists of 100 shirts of which 88
are good, 8 have minor defects and 4 have major defects. Jimmy, a trader, will only accept
the shirts which are good, but Sujatha, another trader, will only reject the shirts which
have major defects. One shirt is drawn at random from the carton. What is the probability that it is acceptable to (i) Jimmy?
(ii) Sujatha?
44. Gopi buys a fish from a shop for his aquarium. The shopkeeper takes out one fish at random from a tank containing 5 male fish and 8 female fish. What is the probability that the fish taken out is a male fish?

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45. A piggy bank contains hundred 50 paise
coins, fifty Rs. 1 coins, twenty Rs. 2 coins and
ten Rs. 5 coins. If it is equally likely that one of the coins will fall out when the bank is turned upside down, find the probability that the coin which fell will be a 50 paise win will be of value more than Rs. 1 will be of value less than Rs. 5 will be a Rs. 1 or Rs. 2 coin.

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46. A game of chance consists of spinning an arrow which comes to rest pointing at one of the numbers $1,2,3,4,5,6,7,8$ (See Fig.
131), and these are equally likely outcomes.

What is the probability that it will point at (i)

8? (ii) an odd number? (iii) a number greater than 2? (iv) a number less than 9 ?

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

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48. If a number $x$ is chosen at random from
the numbers $-2,-1,0,1,2$. What is the probability that $x^{2}<2$ ?

## D Watch Video Solution

49. A jar contains 24 marbles some are green
and others are blue. If a marble is drawn at
random from the jar, the probability that it is green is $2 / 3$. Find the number of blue marbles in the jar.

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50. The probability that it will rain tomorrow is
0.85. What is the probability that it will not rain tomorrow?
51. A die is thrown. Find the probability of getting: (i) a prime number
(ii) 2 or 4
(iii) a multiple of 2 or 3

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52. A die is thrown. Find the probability of getting: (i) an even prime number
(ii) a number greater than 5 (iii) a number lying between 2 and 6

## - Watch Video Solution

53. Three coins are tossed together. Find the probability of getting: (i) exactly two heads
(ii) at most two heads (iii) at least one head and one tail. (iv) no tails

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54. What is the probability that an ordinary
year has 53 sundays?

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55. What is the probability that a leap year has 53 Tuesdays and 53 Mondays?

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56. $A$ and $B$ throw a pair of dice. If $A$ throws 9 , find $B^{\prime} s$ chance of throwing a higher number.
57. Two unbiased dice are thrown. Find the probability that the total of the numbers on the dice is greater than 10.

## D Watch Video Solution

58. A card is drawn at random from a pack of

52 cards. Find the probability that the card drawn is (i) a black king
(ii) either a black
card or a king (iii) black and a king

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59. A card is drawn at random from a pack of

52 cards. Find the probability that the card drawn is (i) a jack, queen or a king
neither a heart nor a king (iii) spade or an ace

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60. A card is drawn at random from a pack of 52 cards. Find the probability that the card drawn is (i) neither an ace nor a king
neither a red card nor a queen. (iii) other than

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61. A card is drawn at random from a pack of

52 cards. Find the probability that the card drawn is (i) a ten
(ii) a spade
(iii) a black
card (iv) the seven of clubs

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62. A card is drawn at random from a pack of

52 cards. Find the probability that the card
(iii) a queen

## D Watch Video Solution

63. A card is drawn at random from a pack of 52 cards. Find the probability that the card drawn is (i) the heart (ii) a red card
neither a king nor a queen

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64. In a lottery of 50 tickets numbered 1 to 50 , one ticket is drawn. Find the probability that the drawn ticket bears a prime number.

## D Watch Video Solution

65. An urn contains 10 red and 8 white balls.

One ball is drawn at random. Find the probability that the ball drawn is white.
66. A bag contains 3 red balls, 5 black balls and

4 white balls. A ball is drawn at random from
the bag. What is the probability that the ball
drawn is:
(i) white?
(ii) red?
black? (iv) not red?

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67. What is the probability that a number selected from the numbers $1,2,3, ; / 15$ is a multiple of 4 ?
68. A bag contains 6 red, 8 black and 4 white balls. A ball is drawn at random. What is the probability that ball drawn is not black?

## D Watch Video Solution

69. A bag contains 5 white and 7 red balls. One ball is drawn at random. What is the probability that ball drawn is white?
70. Tickets numbered from 1 to 20 are mixed up and a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 7 ?

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71. In a lottery there are 10 prizes and 25
blanks. What is the probability of getting a prize?
72. If the probability of winning a game is 0.3 , what is the probability of loosing it?

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73. A bag contains 5 black, 7 red and 3 white balls. A ball is drawn from the bag at random.

Find the probability that the ball drawn is
red
(ii) black or white
(iii) not black
74. A bag contains 4 red, 5 black and 6 white balls. A ball is drawn from the bag at random.

Find the probability that the ball drawn is
white
(ii) red
(iii) not black (iii) red
or white

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75. A black die and a white die are thrown at
the same time. Write all the possible
outcomes. What is the probability
(i) that the sum of the two numbers that turn up is 8 ?
(ii)of obtaining a total of 6?
(iii) of obtaining a total of 10 ?

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76. A black die and a white die are thrown at
the same time. Write all the possible outcomes. What is the probability (i) of obtaining the same number on both dice?
of obtaining a total more than 9 ? (iii) that the sum of the two numbers appearing on the top of the dice is 13 ?

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77. A black die and a white die are thrown at
the same time. Write all the possible outcomes. What is the probability? that the sum of the numbers appearing on the top of the dice is less than or equal to 12 ?
78. One card is drawn from a well shuffled deck of 52 cards. Find the probability of getting: (i) a king of red suit (ii) a face card (iii) a red face card

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79. One card is drawn from a well shuffled deck of 52 cards. Find the probability of getting: (i)
a queen of black suit (ii) a jack of hearts
a spade
80. Five cards-ten, jack, queen, king, and an ace of diamonds are shuffled face downwards. One card is picked at random. What is the probability that the card is a queen?

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81. Five cards-ten, jack, queen, king, and an ace of diamonds are shuffled face downwards. One
card is picked at random. If a king is drawn
first and put aside, what is the probability that
the second card picked up is the (i) ace?
king?

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82. A bag contains 3 red balls and 5 black balls.

A ball is drawn at random from the bag. What is the probability that the ball drawn is:
red (ii) black

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83. A bag contains cards which are numbered from 2 to 90 . A card is drawn at random from the bag. Find the probability that it bears (i) a two digit number
(ii) a number which is a perfect square

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84. A game of change consists of spinning an arrow which is equally likely to come to rest pointing to one of the number, $1,2,3, ; 12$
as shown in Fig. 13.3. What is the probability that it will point to: (FIGURE) (i) 10? (ii) an odd number?

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85. Two customers are visiting a particular
shop in the same week (Monday to Saturday).

Each is equally likely to visit the shop on any one day as on another. What is the probability
that both will visit the shop on: (i) the same day? (ii) different days?

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86. In a class, there are 18 girls and 16 boys.

The class teacher wants to choose one pupil
for class monitor. What she does, she writes
the name of each pupil on a card and puts
them into a basket and mixes thoroughly. A child is asked to pick one card from the basket.

What is the probability that the name written on card is: (a) the name of a girl (b) the name of boy?
87. Why is tossing a coin considered to be a fair way of deciding which team should choose ends in a game of cricket?

## D Watch Video Solution

88. What is the probability that a number selected at random from the number
$1,2,2,3,3,3,4,4,4,4$ will be their average?
89. The faces of a red cube and a yellow cube are numbered from 1 to 6 . Both cubes are rolled. What is the probability that the top face of each cube will have the same number?

## D Watch Video Solution

90. The probability of selecting a green marble
at random from a jar that contains only green,
white and yellow marbles is $1 / 4$. The
probability of selecting $a$ white marble at random from the same jar is $1 / 3$. If this jar contains 10 yellow marbles. What is the total number of marbles in the jar?

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91. There are 30 cards, of same size, in a bag
on which numbers 1 to 30 are written. One
card is taken out of the bag at random. Find
the probability that the number on the selected card is not divisible by 3.

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92. A bag contains 5 red, 8 white and 7 black balls. A ball is drawn at random from the bag.

Find the probability that the drawn ball is (i) red or white (ii) not black (iii) neither white nor black.

## D Watch Video Solution

93. Find the probability that a number selected from the number 1 to 25 is not a
prime number when each of the given numbers is equally likely to be selected.

## D Watch Video Solution

94. A bag contains 8 red, 6 white and 4 black balls. A ball is drawn at random from the bag.

Find the probability that the drawn ball is (i) red or white (ii) not black
95. A bag contains lemon flavoured candies
only. Malini takes out one candy without
looking into the bag. What is the probability that she takes out (i) an orange flavoured candy? (ii) a lemon flavoured candy?

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96. It is given that in a group of 3 students, the probability of 2 students not having the same
birthday is 0.992 . What is the probability that the 2 students have the same birthday?

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97. A bag contains 3 red balls and 5 black balls.

A ball is drawn at random from the bag. What
is the probability that the ball drawn is
red? (ii) not red?

- Watch Video Solution

98. 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 (i) red? (ii) white? (iii) not green?

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99. A lot of 20 bulbs contain 4 defective ones.

One bulb is drawn at random from the lot.

What is the probability that this bulb is defective?

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100. A lot of20 bulbs contain 4 defective ones.

One bulb is selected at random from a
lot.Suppose the bulb drawn in (i) is not defective and not replaced. Now bulb is drawn at random from the rest. What is the probability that this bulb is not defective?
101. A box contains 90 discs which are numbered from 1 to 90 . If one discs is drawn at random from the box, find the probability that it bears (i) a two digit number (ii) a perfect square number (iii) a number divisible by 5.

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102. A lot consists of 144 ball pens of which 20
are defective and others good. Nuri will buy a pen if it is good, but will not buy if it is
defective. The shopkeeper draws one pen at random and gives it to her. What is the probability that (i) She will buy it?
(ii) She will not buy it?

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103. 12 defective pens are accidently mixed with 132 good ones. It is not possible to just look at pen and tell whether or not it is defective. one pen is taken out at random
from this lot. Determine the probability that the pen taken out is good one.

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104. Five cards - the ten, jack, queen king and ace of diamonds, are well-shuffled with their face downwards. One card is then picked up at random. What is the probability that the card is the queen?
105. Five cards - the ten, jack, queen king and
ace of diamonds, are well-shuffled with their
face downwards. One card is then picked up at random. If the queen is drawn and put a side, what is the probability that the second card picked up is (a) an ace? (b) a queen?

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106. Harpreet tosses two different coins simultaneously (say, one is of $\operatorname{Re} 1$ and other of

Rs 2). What is the probability that he gets at least one head?

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107. Two dice,one blue and one grey, are thrown at the same time. Complete the following table: Event: Sum on two dice, 2, 3, 4, 5, 6, 7, 8, 9,10, 11, 12 Probability_, , , , , , , , , , ,
,_, From the above table a student argues
that there are 11 possible outcomes $2,3,4,5,6$,
$7,8,9,10,11$ and 12 . Therefore, each of them
has a probability $1 / 11$. Do you agree with this argument?

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108. Cards marked with numbers $13,14,15,16$ are placed in a box and mixed thoroughly. One card is drawn at random from the box. Find the probability that number on the card drawn is (a) divisible by 5 (b) a number is a perfect square
109. A bag contains 6 red balls and some blue balls. If the probability of drawing a blue ball from the bag is twice that of a red ball, find the number of blue balls in the bag.

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110. A bag contains tickets numbered $11,12,13$,
......, 30. A ticket is taken out from the bag at
random. Find the probability that the number
on the drawn ticket (i) is a multiple of 7 (ii) is greater than 15 and a multiple of 5.

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111. The king, queen and jack of clubs are removed from a deck of 52 playing cards and the remaining cards are shuffled. A card is drawn from the remaining cards. Find the probability of getting a card of (i) heart queen (iii) clubs.
112. Two dice are thrown simultaneously. What is the probability that: 5 will not come up on either of them? 5 will not come up on at least one? (iii) 5 will come up at both dice?

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113. Fill in the blanks: (i) Probability of a sure event is .......... (ii) Probability of an impossible
event is ........... (iii) The probability of an event
(other than sure and impossible event) lies
between ........ (iv) Every elementary event associated to a random experiment has
probability. (v) Probability of an event $A+$
Probability of event ${ }^{\prime} \neg A^{\prime}=$......... (vi) Sum of
the probabilities of each outcome in an experiment is

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114. Examine, If two coins are tossed at the same time, there are 3 possible outcomes two
heads, two tails, or one of each. Therefore, for
each outcome, the probability of occurrence is $1 / 3$.

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115. Examine, If a die is thrown once, there are two possible outcomes an odd number or an even number. Therefore, the probability of obtaining an odd number is $1 / 2$ and the probability of obtaining an even number is $1 / 2$.
116. A box contains 100 red cards, 200 yellow cards and 50 blue cards. If a card is drawn at random from the box, then find the probability that it will be (i) a blue card (ii) not a yellow card (iii) neither yellow nor a blue card.

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117. A number is selected at random from first

50 natural numbers. Find the probability that it is a multiple of 3 and 4 .

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118. A box contains cards numbered $3,5,7,9$,
....., $35,37$. A card is drawn at random from the box. Find the probability that the number on the drawn card is a prime number.

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119. A group consists of 12 persons, of which 3 are extremely patient, other 6 are extremely
honest and rest are extremely kind. A person
from the group is selected at random.

Assuming that each person is equally likely to be selected, find the probability of selecting a person who is (i) extremely patient extremely kind or honest. Which of the above you prefer more.

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120. Cards numbered 1 to 30 are put in a bag.

A card is drawn at random from this bag. Find
the probability that the number on the drawn
card is (i) not divisible by 3
(ii) a prime number greater than 7 (iii) not a perfect square number.

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121. A dice is rolled twice. Find the probability
that (i) 5 will not come up either time. (ii) 5 will come up exactly one time.

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122. All the black face cards are removed from a pack of 52 cards. The remaining cards are well shuffled and then a card is drawn at random. Find the probability of getting a (i) face card (ii) red card
(iii) black card king.

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123. Cards numbered from 11 to 60 are kept in
a box. If a card is drawn at random from the box, find the probability that the number on
the drawn cards is (i) an odd number
perfect square number

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124. A bag contains cards numbered from 1 to
125. A card is drawn from the bag at random,
after mixing the card thoroughly. Find the probability that the number on the drawn card is (i) an odd number (ii) a multiple of 5
(iii) a perfect square
(iv) an even prime number.
126. All kings and queens are removed from a pack of 52 cards. The remaining cards are wellshuffled and then a card is randomly drawn from it. Find the probability that this card is (i) a red face card (ii) a black card.

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126. Red queens and black jacks are removed from a pack of 52 playing cards. A card is
drawn at random from the remaining cards, after reshuffling them. Find the probability that the card drawn is (i) a king (ii) of red colour (iii) a face card (iv) a queen

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127. In a bag contains 20 cards numbered from

1 to 20. A card is drawn at random from the box. Find the probability that the number on the drawn card is (i) divisibly by 2 or 3
(ii) a prime number
128. In a bag there are 44 identical cards with
figure of circle or square on them. There are 24 circles, of which 9 are blue and rest are green and 20 squares of which 11 are blue and rest are green. One card is drawn from the bag at random. Find the probability that it has the figure of (i) square (ii) green colour,

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129. In a musical chair game, the person
playing the music has been advised to stop
playing the music at any time within 2 minutes
after she starts playing. What is the probability that the music will stop within the first half minute after starting?

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130. A missing helicopter is reported to have crashed somewhere in the rectangular region
in Fig. 13.5. What is the probability that it is crashed inside the lake shown in the figure?

## (FIGURE)

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131. In the Fig. 13.12, $J K L M$ is a square with sides of length 6 units. Points $A$ and $B$ are the mid-points of sides $K L$ and $L M$ respectively.

If a point is selected at random from the interior of the square. What is the probability
that the point will be chosen from the interior of $J A B$ ? (FIGURE)

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132. Suppose you drop a tie at random on the rectangular region shown in Fig. 13.14. What is
the probability that it will land inside the circle with diameter 1 m ? (FIGURE)

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133. Cards each marked with one of the numbers $4,5,6, \ldots . . ., 20$ are placed in a box and mixed thoroughly. One card is drawn at random from the box. What is the probability of getting an even number?

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134. One card is drawn from a well shuffled deck of 52 playing cards. What is the probability of getting a non-face card?
135. A bag contains 5 red, 8 green and 7 white balls. One ball is drawn at random from the bag. What is the probability of getting a white ball or a green ball?

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136. A die it thrown once. What is the probability of getting a prime number?
137. A die is thrown once. What is the probability of getting a number lying between 2 and 6?

## D Watch Video Solution

138. A die is thrown once. What is the probability of getting an odd number?
139. If $E^{\prime}$ denote the complement of an event
$E$, what is the value of $P\left(E^{\prime}\right)+P(E) ?$

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140. One card is drawn at random from a well shuffled deck of 52 cards. What is the probability of getting an ace?

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

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142. Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is
the probability that the ticket drawn bears a number which is a multiple of 3 ?
143. From a well shuffled pack of 52 cards, a card is drawn at random. Find the probability of getting a black queen.
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144. A die is thrown once. Find the probability of getting a number less than 3.

## D Watch Video Solution

145. Two coins are tossed simultaneously. Find
the probability of getting exactly one head.

## D Watch Video Solution

146. A die is thrown once. What is the probability of getting a number greater than $4 ?$

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147. What is the probability that a number selected at random from the numbers $3,4,5$, ......, 9 is a multiple of 4 ?

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148. A letter of English alphabet is chosen at random. Determine the probability that the chosen letter is a consonant.
149. If a digit is chosen at random from the digits $1,2,3,4,5,6,7,8,9$, then the probability that it is odd, is
(a) $\frac{4}{9}$
(b) $\frac{5}{9}$
(c) $\frac{1}{9}$
(d) $\frac{2}{3}$

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150. If a digit is chosen at random from the digits $1,2,3,4,5,6,7,8,9$, then the
probability that the digit is even, is
(a) $\frac{4}{9}$
(b) $\frac{5}{9}$
(c) $\frac{1}{9}$
(d) $\frac{2}{3}$

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151. If a digit is chosen at random from the digits $1,2,3,4,5,6,7,8,9$ then, the probability that the digit is a multiple of 3 is
(a) $\frac{1}{3}$
(b) $\frac{2}{3}$
(c) $\frac{1}{9}$
(d) $\frac{2}{9}$

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152. If three coins are tossed simultaneously,
then the probability of getting at least two
heads, is
(a) $\frac{1}{4}$
(b) $\frac{3}{8}$
(c) $\frac{1}{2}$
(d) $\frac{1}{4}$

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153. In a single throw of a die, the probability of getting a multiple of 3 is
(a) $\frac{1}{2}$
(b) $\frac{1}{3}$
(c) $\frac{1}{6}$
(d) $\frac{2}{3}$
154. A number $x$ is chosen at random from the numbers $-3,-2,-1,0,1,2,3$ the probability that $|x|<2$ is $\frac{5}{7}$ (b) $\frac{2}{7}$ (c) $\frac{3}{7}$ (d) $\frac{1}{7}$

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155. A bag contains three green marbles, four blue marbles, and two orange marbles. If a marble is picked at random, then the
probability that it is not an orange marble is
$\frac{1}{4}$ (b) $\frac{1}{3}$ (c) $\frac{4}{9}$ (d) $\frac{7}{9}$

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156. The probability of throwing a number greater than 2 with a fair dice is $\frac{3}{5}$ (b) $\frac{2}{5}$ (c) $\frac{2}{3}$ (d) $\frac{1}{3}$

## D Watch Video Solution

157. A card is accidently dropped from a pack of 52 playing cards. The probability that it is
an ace is $\frac{1}{4}$ (b) $\frac{1}{13}$ (c) $\frac{1}{52}$ (d) $\frac{12}{13}$

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158. The probability that a non-leap year has

53 sundays, is
(a) $\frac{2}{7}$
(b) $\frac{5}{7}$
(c) $\frac{6}{7}$
(d) $\frac{1}{7}$

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159. A number is selected from numbers 1 to 25. The probability that it is prime is
(a) $\frac{2}{3}$
(b) $\frac{1}{6}$
(c) $\frac{1}{3}$
(d) $\frac{5}{6}$

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160. In a single throw a pair of dice, the probability of getting the sum a perfect square is
(a) $\frac{1}{18}$
(b) $\frac{7}{36}$
(c) $\frac{1}{6}$
(d) $\frac{2}{9}$
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161. Which of the following cannot be the probability of an event?
(a) $\frac{2}{3}$
(b) -1.5
(c) $15 \%$
(d) 0.7

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162. If $P(E)=0.05$, then $P(\neg E)=$
(a) -0.05 (b) 0.5
(c) 0.9
(d) 0.95

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163. Which of the following cannot be the probability of occurrence of an event? 0.2 (b)
0.4 (c) 0.8 (d) 1.6

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164. The probability of a certain event is 0 (b) 1
(c) $1 / 2$ (d) non-existent

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165. The probability of an impossible event is 0
(b) 1 (c) $1 / 2$ (d) non-existent

- Watch Video Solution

166. What is the probability that a non-leap year has 53 Sundays? $\frac{6}{7}$ (b) $\frac{1}{7}$ (c) $\frac{5}{7}$ (d) None of these

## D Watch Video Solution

167. Aarushi, sold 100 lottery tickets in which 5
tickets carry prizes. If Priya purchased a ticket, what is the probability of Priya winning a prize? $\frac{19}{20}$ (b) $\frac{1}{25}$ (c) $\frac{1}{20}$ (d) $\frac{17}{20}$
168. A number is selected from first 50 natural numbers. What is the probability that it is a multiple of 3 or $5 ? \frac{13}{25}$ (b) $\frac{21}{50}$ (c) $\frac{12}{25}$ (d) $\frac{23}{50}$

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169. Two dice are rolled simultaneously. The probability that they show different faces is $\frac{2}{3}$
(b) $\frac{1}{6}$ (c) $\frac{1}{3}$ (d) $\frac{5}{6}$
170. What is the probability that a leap year has 52 Mondays?

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171. A month is selected at random in a year.

The probability that it is March or October, is $\frac{1}{12}$ (b) $\frac{1}{6}$ (c) $\frac{3}{4}$ (d) None of these

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172. From the letters of the word MOBILE, a letter is selected. The probability that the letter is a vowel, is $\frac{1}{3}$ (b) $\frac{3}{7}$ (c) $\frac{1}{6}$ (d) $\frac{1}{2}$

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173. If a two digit number is chosen at random,
then the probability that the number chosen
is a multiple of 3 , is (a) $\frac{3}{10}$ (b) $\frac{29}{100}$ (c) $\frac{1}{3}$
$\frac{7}{25}$

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174. Two dice are thrown together. The probability of getting the same number on both dice is $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{1}{6}$ (d) $\frac{1}{12}$

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175. A die is thrown once. The probability of getting a prime number is $\frac{2}{3}$ (b) $\frac{1}{3}$ (c) $\frac{1}{2}$ (d) $\frac{1}{6}$

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176. The probability of getting an even number, when a die is thrown once is (a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{1}{6}$ (d) $\frac{5}{6}$

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177. A box contains 90 discs, numbered from 1 to 90. If one disc is drawn at random from the box, the probability that it bears a prime number less than 23 , is $\frac{7}{90}$ (b) $\frac{10}{90}$ (c) $\frac{4}{45}$ $\frac{9}{89}$
178. The probability that a number selected at random from the numbers $1,2,3, ; 15$ is a multiple of 4 , is $\frac{4}{15}$ (b) $\frac{2}{15}$ (c) $\frac{1}{5}$ (d) $\frac{1}{3}$

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179. A bag contains cards numbered from 1 to
180. A card is drawn at random from the bag.

The probability that the number on this card
is divisible by both 2 and 3. (a) $\frac{1}{5}$ (b) $\frac{3}{25}$ (c)
$\frac{4}{25}$ (d) $\frac{2}{25}$

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180. Two different coins are tossed simultaneously. The probability of getting at
least one head is $\frac{1}{4}$ (b) $\frac{1}{8}$ (c) $\frac{3}{4}$ (d) $\frac{7}{8}$

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181. If two different dice are rolled together,
the probability of getting an even number on
both dice, is (a) $\frac{1}{36}$ (b) $\frac{1}{2}$ (c) $\frac{1}{6}$ (d) $\frac{1}{4}$

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182. A number is selected at random from the numbers 1 to 30 . The probability that it is a prime number is (a) $\frac{2}{3}$ (b) $\frac{1}{6}$ (c) $\frac{1}{3}$ (d) $\frac{11}{30}$
183. A card is drawn at random from a pack of 52 cards. The probability that the drawn card is not an ace is (a) $\frac{1}{13}$ (b) $\frac{9}{13}$ (c) $\frac{4}{13}$ (d) $\frac{12}{13}$

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