

INDIAN SCHOOL AL WADI AL KABIR

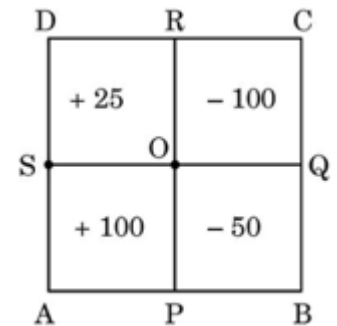
Class X, Mathematics

PROBABILITY_DTQ WORKSHEET

Questions of 2 marks each

Q.1. Two dice of different colours are thrown at the same time. Write down all the possible outcomes. What is the probability that:
(i) same number appears on both the dice?
(ii) the sum of two numbers more than 10?

Q.2. A square dart board is divided into four equal squares as shown in the figure given below. If a dart hits square APOS, a player wins ₹100. If a dart hits square BPOQ, a player loses ₹50. If a dart hits square OQCR, a player loses ₹ 100 and if it hits square ORDS, the player will win ₹ 25. A player takes a turn and hits the dart board. What is the probability that
(i) the player loses money?
(ii) the player wins ₹ 100?



Q.3. A bag contains 25 balls. Some of them are yellow and others are green. One ball is drawn at random. If probability of getting a green ball is $\frac{3}{5}$, then find the number of yellow balls.

Q.4. A bag contains 10 red pens, out of which 3 are defective and 8 blue pens, out of which 4 are defective. A pen is taken out from the bag at random. Find the probability that
(i) it is a defective pen,
(ii) it is a non-defective red pen.

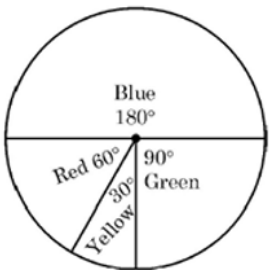
Q.5. Find the probability that a number selected at random from the numbers 30 to 60 is
(i) a prime number
(ii) a multiple of 6.

Q.6. Slips of letters of the word “background” are put in a bowl and thoroughly mixed. One slip is picked up at random. Find the probability that picked up slip’s letter is
(i) a vowel
(ii) present in the word “BALL”.

Q.7. All the red face cards are removed from a pack of 52 playing cards. The remaining cards are well shuffled and then a card is drawn at random. Find the probability of getting a:
(i) red card
(ii) a king or queen

Questions of 3 marks each

Q.8. A bag contains 30 balls out of which “m” number of balls are blue in colour.
(i) Find the probability that a ball drawn at random from the bag is not blue.
(ii) If 6 more blue balls are added in the bag, then the probability of drawing a blue ball will be $\frac{5}{4}$ times the probability of drawing a blue ball in first case. Find the value of m.

Q.9.	A number is chosen at random from numbers between 60 and 100. Find the probability that it is: (i) an even number (ii) a prime number.
Q.10.	In a carton, there were blue, red, green and yellow balls. There were 240 balls. The number of balls of each colour is represented in the following pie chart. If Shreya picked a ball at random, then what is the probability that she picked a yellow ball? If 20 more yellow balls were added to the carton, what is the probability that now she picked a ball which is yellow or green? 
Q.11.	Offices in Delhi are open for 5 days a week Monday to Friday. Two employees of an office remain absent for one day in the same particular week. Find the probability that they remain absent on the same day. Also, find the probability that it was a Friday.
Q.12.	Two coins are tossed simultaneously. What is the probability of getting (i) at least one head (ii) at most one tail (iii) a head and a tail?
Q.13.	A year is selected at random. Answer the following: i) What is the probability that a non-leap year has 53 Mondays? ii) What is the probability that a leap year has 53 Fridays? iii) What is the probability that a non-leap year has 52 Saturdays?
	Questions of 5 marks each
Q.14.	Raghav has a collection of marbles of different colours. He has a total of 35 marbles in his basket out of which seven are black in colour and eight are yellow in colour. Out of remaining balls, some are white and the rest are red. (i) If the probability of drawing a red ball at random from the basket is three times that of a white ball, then find the number of red balls in the basket. (ii) Find the probability of drawing a ball at random from the basket which is either a black or a white ball.
	CASE STUDY QUESTION:
Q.15.	A group of friends wanted to play cards with two identical packs together. While shuffling the cards, three cards are dropped. Rest of the cards are shuffled and one card is drawn at random. Assuming that the dropped cards were a queen of hearts, a ten of spades and an ace of clubs, answer the following questions: (i) Find the probability that the drawn card is a face card. (ii) Find the probability that the drawn card is either a king or a queen. (iii) (a) Do you think that the probability of getting a queen was higher if none of the cards were dropped? Justify your answer. (iii) (b) Find the probability that the drawn card is a jack. Compare it with the probability when none of the cards were dropped. In which case is the probability of getting a jack is higher? 

Q.16.	A school conducted a lucky draw during its annual function. The draw box contained 100 chits, each with a unique number from 1 to 100. The distribution of the chits is as follows: *30 chits had red markings. *20 chits were having numbers which are multiple of 5. *15 chits had both red markings and numbers which are multiples of 5. *The rest were plain having no marking and no number. One chit is drawn at random from the box. Based on the above, answer the following questions: (i) What are the total number of outcomes? (ii) What is the probability that the chit drawn has a red marking only? (iii) (a) What is the probability that the chit has a multiple of 5 but no red marking? (iii) (b) What is the probability that the chit drawn is neither of red marking nor a multiple of 5?							
	ANSWERS							
	Q.1.	(i) 6/36 (ii) 3/36	Q.2.	(i) 2/4 (ii) 1/4	Q.3.	10	Q.4.	(i)7/18 (ii) 7/18
	Q.5.	(i) 7/31 (ii) 6/31	Q.6.	(i) 3/10 (ii) 2/10	Q.7.	20/46, 4/46	Q.8.	(i) $1 - \frac{m}{30}$ (ii)12
	Q.9.	(i) 19/39 , (ii) 8/39	Q.10.	100/260	Q.11.	5/25, 1/25	Q.12.	3/ 4 , 3/ 4 , 1/ 2
	Q.13.	(i)1/7, (ii) 2/7, (iii) 6/7	Q.14.	(i) 15, (ii)12/35	Q.15.	(i) 23/101	Q.15.	(ii) 15/101
	Q.15.	iii)(a) yes, $\because \frac{8}{104} > \frac{7}{101}$ as $808 > 728$ So, probability of getting a queen was higher if none of the cards were dropped. (iii)(b) $\frac{8}{101} > \frac{8}{104}$ as $101 < 104$ Therefore probability of getting a jack is higher when 3 cards were dropped.			Q.16.	(i)100 (ii)15/100 (iii) (a) 5/100 (b) 65/100		
