



INDIAN SCHOOL AL WADI AL KABIR

Class IX, Mathematics

Worksheet-Probability

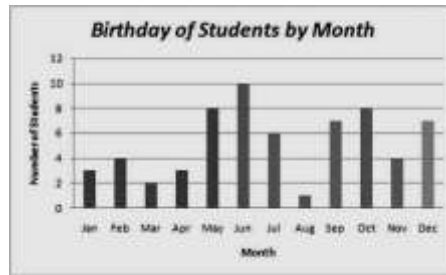
Q. No.	Questions of 1 Mark each.							
1.	There are 5 prizes on 1000 tickets of a lottery of company. Probability of winning the prize is							
	(A)	$\frac{199}{200}$	(B)	$\frac{1}{200}$	(C)	$\frac{198}{200}$	(D)	None of these
2.	If a coin is tossed for a certain number of times. How many times the coin was tossed, if the probability of getting a head is 0.4 and it appeared up for 24 times?							
	(A)	60	(B)	50	(C)	40	(D)	55
3.	In a GK test a student was given 50 questions one by one. He gave the correct answer for 30 questions. Find the probability of giving correct answers.							
	(A)	$\frac{4}{5}$	(B)	$\frac{34}{60}$	(C)	$\frac{3}{5}$	(D)	$\frac{6}{5}$
4.	If $P(E) = 0.37$, then $P(\text{not } E)$ will be							
	(A)	0.37	(B)	0.63	(C)	0.57	(D)	None of these
5.	Probability of getting even number in a single throw of dice is							
	(A)	$\frac{1}{2}$	(B)	$\frac{1}{6}$	(C)	$\frac{5}{6}$	(D)	$\frac{2}{3}$
6.	<p>Assertion : A coin is tossed 30 times and head appears 18 times. Then the probability of getting a tail is $\frac{12}{30}$.</p> <p>Reason : Probability of happening of an event = $\frac{\text{Number of trials in which the event happened}}{\text{Total number of trials}}$.</p> <p>(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).</p> <p>(b) Both assertion (A) and reason (R) are true and reason (R) is not the correct explanation of assertion (A).</p>							

	<p>(c) Assertion (A) is true but reason (R) is false.</p> <p>(d) Assertion (A) is false but reason (R) is true.</p>										
7.	<p>Assertion : If E_1, E_2, \dots, E_n are n elementary events associated to a random experiment, then $P(E_1) + P(E_2) + \dots + P(E_n) = 1$</p> <p>Reason : For any event 'A' associated to an experiment, we have $-1 \leq P(E_1) \leq 1$</p> <p>(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).</p> <p>(b) Both assertion (A) and reason (R) are true and reason (R) is not the correct explanation of assertion (A).</p> <p>(c) Assertion (A) is true but reason (R) is false.</p> <p>(d) Assertion (A) is false but reason (R) is true.</p>										
	Questions of 2 marks each										
8.	<p>The given table shows the number of students participating in various activities in a school.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Activities</th> <th>No. of students</th> </tr> </thead> <tbody> <tr> <td>Game</td> <td>27</td> </tr> <tr> <td>Music</td> <td>36</td> </tr> <tr> <td>Singing</td> <td>15</td> </tr> <tr> <td>Drama</td> <td>12</td> </tr> </tbody> </table> <p>From the above information, one student is chosen at random.</p> <p>(i) Find the probability that the student participating in games.</p> <p>(ii) Find the probability that the student participating in music.</p>	Activities	No. of students	Game	27	Music	36	Singing	15	Drama	12
Activities	No. of students										
Game	27										
Music	36										
Singing	15										
Drama	12										
9.	<p>The record of a weather station shows that out of the past 250 consecutive days, its weather forecast was correct 175 times.</p> <p>(i) What is the probability that on a given day it was correct?</p> <p>(ii) What is the probability that it was not correct on a given day?</p>										
10.	<p>The blood group of 30 students of class IX are recorded as follows:</p> <p>A, B, O, O, AB, O, A, O, B, A, O, B, A, O, O, A, AB, O, A, A, O, O, AB, B, A, O, B, A, B, O</p> <p>A student is selected at random from the class from blood donation. Find the probability that the blood groups of the student chosen is</p> <p>(i) A (ii) B (iii) AB (iv) O</p>										

11.	<p>A die having six faces is tossed 80 times and the data is as below:</p> <table border="1" data-bbox="252 248 1426 360"> <tr> <td>Outcome</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> </tr> <tr> <td>Frequency</td> <td>10</td> <td>20</td> <td>10</td> <td>28</td> <td>8</td> <td>4</td> </tr> </table> <p>Find (i) P (1) (ii) P (4) (iii) P (6) (iv) P (5)</p>	Outcome	1	2	3	4	5	6	Frequency	10	20	10	28	8	4										
Outcome	1	2	3	4	5	6																			
Frequency	10	20	10	28	8	4																			
12.	<p>Twenty bags of sugar, each marked 10 Kg, actually gives the following data:</p> <table border="1" data-bbox="252 477 1501 611"> <tr> <td>Weight of a bag(in Kg)</td> <td>9.5 - 9.8</td> <td>9.8 – 9.9</td> <td>9.9 - 10.0</td> <td>10.0 - 10.1</td> </tr> <tr> <td>Number of bags</td> <td>1</td> <td>2</td> <td>5</td> <td>12</td> </tr> </table> <p>(i) Find the probability that the bag chosen at random weigh 10 Kg or more? (ii) Find the probability that the bag chosen at random weigh less than 10 Kg?</p>	Weight of a bag(in Kg)	9.5 - 9.8	9.8 – 9.9	9.9 - 10.0	10.0 - 10.1	Number of bags	1	2	5	12														
Weight of a bag(in Kg)	9.5 - 9.8	9.8 – 9.9	9.9 - 10.0	10.0 - 10.1																					
Number of bags	1	2	5	12																					
Questions of 3 marks each																									
13.	<p>A travel company has 100 drivers for driving buses to various tourists destinations. Given below is a table showing the resting time of the drivers after covering a certain distance (in km).</p> <table border="1" data-bbox="252 925 1541 1037"> <tr> <td>Distance(in Km)</td> <td>After 80 km</td> <td>After 115 km</td> <td>After 155 km</td> <td>After 200 km</td> </tr> <tr> <td>No. of drivers</td> <td>13</td> <td>47</td> <td>30</td> <td>10</td> </tr> </table> <p>What is the probability that the driver chosen at random :</p> <p>a) takes a halt after covering 80 km? b) takes a halt after covering 115 km? c) takes a halt after covering 155 km?</p>	Distance(in Km)	After 80 km	After 115 km	After 155 km	After 200 km	No. of drivers	13	47	30	10														
Distance(in Km)	After 80 km	After 115 km	After 155 km	After 200 km																					
No. of drivers	13	47	30	10																					
14.	<p>Two dice are thrown 500 times. Each time the sum of two numbers appearing is recorded.</p> <table border="1" data-bbox="252 1317 1528 1429"> <tr> <td>Sum</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> <td>11</td> <td>12</td> </tr> <tr> <td>Frequency</td> <td>14</td> <td>30</td> <td>42</td> <td>55</td> <td>72</td> <td>75</td> <td>70</td> <td>53</td> <td>46</td> <td>28</td> <td>15</td> </tr> </table> <p>What is the probability of getting a sum</p> <p>(i)more than 10 (ii)less than or equal to 5 (iii)between 8 and 12</p>	Sum	2	3	4	5	6	7	8	9	10	11	12	Frequency	14	30	42	55	72	75	70	53	46	28	15
Sum	2	3	4	5	6	7	8	9	10	11	12														
Frequency	14	30	42	55	72	75	70	53	46	28	15														
15.	<p>Marks obtained by 50 students in a class test of 100 marks are given below :</p> <table border="1" data-bbox="411 1713 1382 1854"> <tr> <td>Marks Obtained</td> <td>0-25</td> <td>25-50</td> <td>50-75</td> <td>75-100</td> </tr> <tr> <td>No. Of Students</td> <td>4</td> <td>12</td> <td>18</td> <td>16</td> </tr> </table> <p>Find (i) the probability that a student obtained less than 50% marks. (ii) the probability that a student obtained more than or equal to 75% marks.</p> <p>Also check whether the sum of each of the probabilities is 1.</p>	Marks Obtained	0-25	25-50	50-75	75-100	No. Of Students	4	12	18	16														
Marks Obtained	0-25	25-50	50-75	75-100																					
No. Of Students	4	12	18	16																					

16.

In a particular section of class IX, 40 students were asked about the month of their birth and following graph was prepared for data so obtained:



(i) Find the probability that a student of the class was not born in March.

(ii) Find the probability that a student of the class was born in June.

(iii) Find the probability that a student of the class was selected at random was born after August.

Questions of 4 marks each

17.

Books are packed in piles each containing 20 books. Thirty-five piles were examined for defective books and the results are given in the following table :

No. of defective books	0	1	2	3	4	5	6	Above 6
Frequency	400	180	48	41	18	8	3	2

One pile was selected at random. What is the probability that it has :

(i) no defective books ?

(ii) more than 0 but less than 4 defective books ?

(iii) more than 4 defective books?

(iv) exactly 4 defective books

18.

A recent survey found that the ages of workers in an insurance company are distributed as follows:

Age (in years)	20 - 29	30 - 39	40 - 49	50 - 59	60 and above
No. Of workers	38	27	86	46	3

If a person is selected at random, find the probability that the person is

(i) 40 years or more

(ii) under 40 years

(iii) under 60 years but over 39 years

(iv) find the sum of (i) and (ii)


19. The daily cost of milk (in ₹) supplied to 25 houses in a locality are given below :

Costs (in ₹)	40 - 50	50 - 60	60 - 70	70 - 80	80 - 90	90 - 100
No. of hours	4	5	3	5	2	6

If one house is chosen at random, find the probability that ;

(a) the milk bill of the house lies from ₹ 60 and less than ₹ 80.
 (b) house is paying at the most ₹ 69, for the milk bill.
 (c) the milk bill of the house is below ₹ 50.
 (d) the milk bill of the house is ₹ 160.

20. **CASE STUDY:** Mohan has a box of coloured pens, he takes a pen at random from the box. The probability that she takes a red pen is 0.4 . If the box contains total 50 pens of blue green and red colour and there are 15 blue pens and 15 green pens then answer the following questions:



(i) Find the probability that he does not take red pen.
 (ii) Find the number of red pens in the box.
 (iii) Find the probability of taking blue pen.
 (iv) Find the probability of not getting blue and red pen.

Answers

Answers	1	B	2	A	3	C	4	B
	5	A	6	A	7	C	8	(i) 0.3 (ii)0.4
	9	(i)0.7(ii)0.3	10	(i)0.3(ii)0.2(iii)0.1 (iv)0.4	11	(i) $\frac{1}{8}$ (ii) $\frac{7}{20}$ (iii) $\frac{1}{20}$ (iv) $\frac{1}{10}$	12	(i)0.6(ii)0.4
	13	(i)0.13(ii)0.6 (iii)0.9	14	(i) $\frac{43}{500}$ (ii) $\frac{141}{500}$ (iii) $\frac{127}{500}$	15	(i) $\frac{8}{25}$ (ii) $\frac{8}{25}$ (iii) yes	16	(i) $\frac{19}{20}$ (ii) $\frac{1}{4}$ (iii) $\frac{13}{20}$
	17	(i) $\frac{4}{7}$ (ii) $\frac{269}{700}$ (iii) $\frac{13}{700}$ (iv) $\frac{9}{350}$	18	(i) $\frac{27}{40}$ (ii) $\frac{13}{40}$ (iii) $\frac{33}{50}$ (iv) 1	19	(i) $\frac{8}{25}$ (ii) $\frac{12}{25}$ (iii) $\frac{4}{25}$ (iv)0	20	(i)0.6 (ii)20 (iii)0.3 (iv)0.3