MATHS

BOOKS - SWAN PUBLICATION

PROBABILITY

Exercise 15 1

1. In a cricket match, a batswoman hits a boundary 6 times out of 30 balls she plays.

Find the probability that she did not hit a boundary.

2. An Organisation selected 2400 families at random and surveyed them to determine a relationship between income level and the number of vehiclesin a family. The information gathered is listed in the table below :

Monthly income in ?	Vehicles per family			
	0	1	2	Above 2
Less than 7000	10	160	25	0
7000-10000	0	305	27	2
10000-13000	1	535	29	1
13000-16000	2	469	59	25
16000 or more	1	579	82	88

Suppose

a family is chosen. Find the probability that the family chosen is : earning $ 13000-16000 per month and owning more than 2 vehicles.

3. The distance (in km) of 40 engineers from their residence to their place of work were found as follows:

5, 3, 10, 20, 25, 11, 13, 7, 12, 31

19, 10, 12, 17, 18, 11, 32, 17, 16, 2

7, 9, 7, 8, 3, 5, 12, 15, 18, 3

12, 14, 2, 9, 6, 15, 15, 7, 6, 12

Construct a grouped frequency distribution table with class size 5 for the data given above taking the first interval as 0-5 (5 not included). What main features do you observe from this tabular representation ?

4. The distance (it. Km) of 40 engineers from their resisdence to their place of work were found as follows :

5	3	10	20	25	11	13	7	12	31
19	10	12	17	18	11	32	17	16	2
7	9	7	8	3	5	12	15	18	3
12	14	2	9	6	15	15	7	6	12

What is the empirical probability that an engineer lives :

More than or equal to 7 km from their place of work ?

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5. The distance (it. Km) of 40 engineers from their resisdence to their place of work were found as follows :

5	3	10	20	25	11	13	7	12	31
19	10	12	17	18	11	32	17	16	2
7	9	7	8	3	5	12	15	18	3
12	14	2	9	6	15	15	7	6	12

What is the empirical probability that an engineer lives :

within $\dfrac{1}{2}$ km from her place of work ?

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6. Activity : Note the frequency of two-wheelers, three-wheelers and four-wheelers going past during a time interval, in front of your school gate. Find the probability that any

one vehicle out of the total vehicles you have observed is a two-wheeler.

7. Activity : Ask all the students in your class to write a 3-digit number. Choose any student from the room at random. What is the probability that the number written by her/him is divisible by 3? Remember that a number is divisible by 3, if the sum of its digits is divisible by 3.

8. Eleven bags of wheat flour, each marked 5 kg, actually contained the following weights of flour (in kg): 4.97 5.05 5.08 5.03 5.00 5.06 5.08 4.98 5.04 5.07 5.00 Find the probability that any of these bags chosen at random contains more than 5 kg of flour.

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9. A study was conducted to find out the concentration of sulphur dioxide in the air in parts miliion (ppm) of a certain city. The data obtained for 30 days is as follows :

0.03 0.08 0.08 0.09 0.04 0.17
0.16 0.05 0.02 0.06 0.18 0.20
0.11 0.08 0.02 0.13 0.22 0.07
0.08 0.01 0.10 0.06 0.09 0.18
0.11 0.07 0.05 0.07 0.01 0.04

Uisng this table, find the probability of the conectration of sulphur dioxide in the interval 0.12 - 0.16 on any of these days.

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10. The blood groups of 30 students of Class VIII are recorded as follows: 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. Use this table to determine the probability that a student of this class, selected at random, has blood group AB.

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Objective Type Questions

1. When we toss a coin how many total possible outcomes are there ?

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2. When we throw a die how many total possible outcomes are there ?

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3. What is torsion? What is its effect?

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4. What is the formula for calculating the probabiity of an event E happening ?

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5. A die is tossed once. What is the probability of :

getting the number less than 8.

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1. The probability of each event lies between

……….. And ……………

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2. Complete the following statements: The

sum of the probabilities of all the elementary

events of an experiment is …….. .

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3. The probability of an impossible event is

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4. Complete the following statement: The probability of an event that is certain to happen is_____.Such an event is called_____.

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Objective Type Questions Fill In The Blanks

1. The number of outcomes (m) favourable to an event cannot be .... than the total number of outcomes (n).

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2. True or false

If E be an event associated with an experiment then P(E')=1-P(E).

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3. If P (E) = 0, E is called an …………………… .

4. If P (E) = 0, E is called an …………………… .

5. A card is drawn from pack of 52 cards. The probability of drawing king of diamond = ……………….

6. A coin is tossed once. The probablity of tail occurs = …………………

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