NCERT Solutions for Class 9 Maths Chapter 15 - Probability

Chapter 15 - Probability Exercise Ex. 15.1

Solution 1

Number of times batswoman hits a boundary = 6

Total number of balls played = 30

$\therefore$ Number of times that the batswoman does not hit a boundary = 30 - 6 = 24

$$\text{Required probability} = \frac{\text{Number of times when she does not hit boundary}}{\text{Total number of balls played}}$$

$$= \frac{24}{30} = \frac{4}{5}$$

Solution 2

Total number of bags = 11

Number of bags containing more then 5 kg of flour = 7

Required probability = $\frac{7}{11}$

Solution 3

Number days for which the concentration of sulphur dioxide was in the

interval of 0.12 - 0.16 = 2

Total number of days = 30

Required probability = $\frac{2}{30} = \frac{1}{15}$

Solution 4

Number of students having blood group AB = 3

Total number of students = 30

Required probability = $\frac{3}{30} = \frac{1}{10}$

Solution 5

Total number of families = 475 + 814 + 211 = 1500

(i) Number of families having 2 girls = 475

$$\text{Required probability} = \frac{\text{Number of families having 2 girls}}{\text{Total number of families}}$$
$$= \frac{475}{1500} = \frac{19}{60}$$

(ii) Number of families having 1 girl = 814

$$\text{Required probability} = \frac{\text{Number of families having 1 girls}}{\text{Total number of families}}$$
$$= \frac{814}{1500} = \frac{407}{750}$$

(iii) Number of families having no girl = 211

Thus, the sum of all these probabilities is 1.

$$\text{Required probability} = \frac{\text{Number of families having no girl}}{\text{Total number of families}}$$
$$= \frac{211}{1500}$$

$$\text{Sum of all these probabilities} = \frac{19}{60} + \frac{407}{750} + \frac{211}{1500}$$
$$= \frac{475 + 814 + 211}{1500}$$
$$= \frac{1500}{1500} = 1$$

Thus, the sum of all these probabilities is 1.

Solution 6

Number of students born in August = 6

Total number of students = 40

$$\text{Required probability} = \frac{\text{Number of students born in August}}{\text{Total number of students}} = \frac{6}{40} = \frac{3}{20}$$

Solution 7

Number of times 2 heads come up = 72

Total number of times the coins were tossed = 200

$$P(\text{2 heads will come up}) = \frac{\text{Number of times 2 heads come up}}{\text{Total number of times the coins were tossed}}$$
$$= \frac{72}{200} = \frac{9}{25}$$

Solution 8

Number of families surveyed = 2400

(i) Number of families earning Rs 10000 - 13000 per month and owning exactly 2 vehicles = 29

Required probability = $\frac{29}{2400}$

(ii) Number of families earning Rs 16000 or more per month and owning exactly 1 vehicle = 579

Required probability = $\frac{579}{2400}$

(iii) Number of families earning less than Rs 7000 per month and does not own any vehicle = 10

Required probability = $\frac{10}{2400} = \frac{1}{240}$

(iv) Number of families earning Rs 13000 - 16000 per month and owning more than 2 vehicles = 25

Required probability = $\frac{25}{2400} = \frac{1}{96}$

(v) Number of families owning not more than 1 vehicle = 10 + 160 + 0 + 305 + 1 + 535 + 2 + 469 + 1 + 579 = 2062

Required probability = $\frac{2062}{2400} = \frac{1031}{1200}$

Solution 9

Total number of students = 90

(i) Number of students who obtained less than 20% marks in the test = 7

Required probability = $\frac{7}{90}$

(ii) Number of students who obtained marks 60 or above = 15 + 8 = 23

Required probability = $\frac{23}{90}$

Solution 10

Total number of students = 135 + 65 = 200

(i) Number of students who like statistics = 135

P(student likes statistics) = $\frac{135}{200} = \frac{27}{40}$

(ii) Number of students who do not like statistics = 65

P(student does not like statistics) = $\frac{65}{200} = \frac{13}{40}$

Solution 11

Total number of engineers = 40

(i) Number of engineers living at a distance of less than 7 km form their place of work = 9

Required probability = $\frac{9}{40}$

(ii) Number of engineers living at a distance of more than or equal to 7 km from their place of work

= 40 - 9 = 31

Required probability = $\frac{31}{40}$

(iii) Number of engineers living within a distance of $\frac{1}{2}$ km from her place of work = 0

Required probability = 0