

Probability from Two-Way Tables

ANSWERS

1

The table shows how 30 students travel to school. One is picked at random. Find the probability of picking a girl who walks.

	Walk	Bus	Total
Boys	8	6	14
Girls	9	7	16
Total	17	13	30

$$P = \frac{9}{30} \quad \begin{array}{l} \text{the ones you want} \\ \text{everyone} \end{array}$$

$$\text{Answer } \frac{3}{10}$$

2

The table shows the drinks chosen by 40 students. One is picked at random. Find the probability of picking a Year 8 student who chose juice.

	Tea	Juice	Total
Year 7	5	10	15
Year 8	12	13	25
Total	17	23	40

$$P = \frac{13}{40} \quad \begin{array}{l} \text{the ones you want} \\ \text{everyone} \end{array}$$

$$\text{Answer } \frac{13}{40}$$

3

The table shows what 40 people did at a leisure centre. One is picked at random. Find the probability of picking a child who swam.

	Swim	Gym	Total
Adults	14	6	20
Children	11	9	20
Total	25	15	40

$$P = \frac{11}{40} \quad \begin{array}{l} \text{the ones you want} \\ \text{everyone} \end{array}$$

$$\text{Answer } \frac{11}{40}$$

4

The table shows 50 people: left- or right-handed, with or without glasses. One is picked at random. Find the probability of picking a right-handed person with glasses.

	Glasses	None	Total
Left	3	7	10
Right	12	28	40
Total	15	35	50

$$P = \frac{12}{50} \quad \begin{array}{l} \text{the ones you want} \\ \text{everyone} \end{array}$$

$$\text{Answer } \frac{6}{25}$$

5

The table shows the pets owned by 40 students. One is picked at random. Find the probability of picking a girl.

	Cat	Dog	Total
Boys	7	13	20
Girls	11	9	20
Total	18	22	40

$$P = \frac{20}{40}$$

$$\text{Answer } \frac{1}{2}$$

6

The table shows 60 train journeys. One is picked at random. Find the probability of picking a late train.

	Late	On time	Total
Monday	4	26	30
Tuesday	6	24	30
Total	10	50	60

$$P = \frac{10}{60}$$

$$\text{Answer } \frac{1}{6}$$

7

The table shows the lunches of 50 students. One is picked at random. Find the probability of picking a student who had a hot lunch.

	Hot	Cold	Total
Year 9	15	5	20
Year 10	10	20	30
Total	25	25	50

$$\text{Answer } \frac{1}{2}$$

8

The table shows 80 members of a gym. One is picked at random. Find the probability of picking a member under 30.

	Morning	Evening	Total
Under 30	12	28	40
30 or over	22	18	40
Total	34	46	80

$$\text{Answer } \frac{1}{2}$$

Probability from Two-Way Tables *further practice*

ANSWERS

9

The table shows how 60 people travelled to a concert. One person is picked at random. Find the probability of picking a woman who came by train.

	Car	Train	Bus	Total
Men	14	9	7	30
Women	11	16	3	30
Total	25	25	10	60

$$\frac{16}{60}$$

$$\text{Answer } \frac{4}{15}$$

10

The table shows 40 pets at a vet's clinic. One pet is picked at random. Find the probability that it is not a cat.

	Dog	Cat	Total
Young	8	12	20
Old	15	5	20
Total	23	17	40

$$40 - 17 = 23, \text{ so } \frac{23}{40}$$

$$\text{Answer } \frac{23}{40}$$

11

60 students chose a drink at a sports day. Complete the table. Then find the probability that a student picked at random is a Year 8 student who chose water.

	Water	Squash	Total
Year 7	18	7	25
Year 8	22	13	35
Total	40	20	60

$$\frac{22}{60}$$

$$\text{Answer } \frac{11}{30}$$

12

The table shows the 40 books on a shelf. One book is picked at random. Find the probability that it is a paperback.

	Hardback	Paperback	Total
Fiction	6	9	15
Poetry	11	4	15
Science	3	7	10
Total	20	20	40

$$\frac{20}{40}$$

$$\text{Answer } \frac{1}{2}$$

13

The table shows 50 members of a swimming club. One member is picked at random. The probability of picking a junior who swims in races is $\frac{3}{10}$. Find the missing number.

	Races	No races	Total
Junior	15	9	24
Senior	6	20	26
Total	21	29	50

$$\frac{3}{10} \text{ of } 50 = 15$$

$$\text{Answer } 15$$

14

A garden centre sold 60 plants. 32 were roses. 23 of the roses were red. 39 of the plants altogether were red. Complete the table. A plant is picked at random. Find the probability that it is not a rose and not red.

	Red	Not red	Total
Rose	23	9	32
Other	16	12	28
Total	39	21	60

$$\frac{12}{60}$$

$$\text{Answer } \frac{1}{5}$$

15

Club A has 40 members and Club B has 60 members. A member is picked at random from each club. From which club is the member more likely to be a junior girl? Show how you know.

Club A	Girl	Boy	Total
Junior	12	8	20
Adult	11	9	20

Club B	Girl	Boy	Total
Junior	15	21	36
Adult	10	14	24

$$\frac{12}{40} = \frac{3}{10} \text{ and } \frac{15}{60} = \frac{1}{4}$$

$$\text{Answer } \text{Club A}$$

16

The table shows how 30 friends paid for lunch. One friend is picked at random. Sam says the probability of picking a teenager who paid by card is $\frac{11}{20}$. Is Sam right? Explain.

	Card	Cash	Total
Adult	9	6	15
Teen	11	4	15
Total	20	10	30

$$\text{it is 11 out of all 30, not out of 20}$$

$$\text{Answer } \text{No, it is } \frac{11}{30}$$