Conditional probability: two-way tables

1

A book is chosen at random. **Given that** the book was borrowed by a child, which group do you look at? Find its total.

	Fiction	Non-fiction	Total
Adult	23	17	
Child	31	9	
Total			

Look at Child Total

2

A student is chosen at random.
Given that the student is in Year 8, which group do you look at? Find its total.

	Running	Jumping	Total
Year 7	16	19	
Year 8	22	13	
Total			

Look at _____ Total

3 *Notice the change!*

A plant is chosen at random. **Given that** the plant has flowers, which group do you look at? Find its total.

	Flowers	No flowers	Total
Indoor	12	18	
Outdoor	27	13	
Total			

Look at _____ Total

4

A student is chosen at random.
Given that the student chose the zoo, which group do you look at? Find its total.

	Museum	Zoo	Beach	Total
Year 9	14	21	10	
Year 10	18	15	12	
Total				

Look at _____ Total

5

A cake is chosen at random. **Given that** the cake is chocolate, find the probability that the cake is large.

	Large	Small	Total
Chocolate	18	24	42
Lemon	11	7	18
Total	29	31	60

Look at Chocolate Total 42

Of these, Large

Probability

6

A bike is chosen at random. **Given that** the bike is a mountain bike, find the probability that the bike is red.

	Red	Blue	Total
Road	9	16	25
Mountain	21	14	35
Total	30	30	60

Look at Mountain Total

Of these, Red

Probability

7 *Notice the change!*

A piece of fruit is chosen at random.
Given that the piece of fruit is green, find the probability that the piece of fruit is an apple.

	Green	Red	Total
Apple	15	25	40
Pear	20	4	24
Total	35	29	64

Look at _____ Total

Of these, Apple

Probability

8

A dog is chosen at random. **Given that** the dog is a puppy, find the probability that the dog is large.

	Puppy	Adult	Total
Small	6	14	20
Medium	9	21	30
Large	5	25	30
Total	20	60	80

Probability

Conditional probability: two-way tables *further practice*

9

The table shows how 90 people travelled to a festival. A person is chosen at random. Given that the person is under 25, find the probability that they came by train.

	Train	Car	Total
Under 25	27	18	45
25 and over	21	24	45
Total	48	42	90

Answer _____

10

The table shows the ice creams a van sold. An ice cream is chosen at random. Given that it is strawberry, find the probability that it was in a tub.

	Vanilla	Mint	Strawberry	Total
Cone	19	8	12	39
Tub	11	14	16	41
Total	30	22	28	80

Answer _____

11

The table shows the students in a school's choir and band. One is chosen at random.
(a) Given that the student is in Year 7, find the probability that they sing in the choir.
(b) Given that the student sings in the choir, find the probability that they are in Year 7.

	Choir	Band	Total
Year 7	15	10	25
Year 8	9	16	25
Total	24	26	50

Answer _____

12

Complete the table. A student is chosen at random. Given that the student has a dog, find the probability that they are in Year 10.

	Dog	No dog	Total
Year 9	13		35
Year 10		28	
Total	30		80

Answer _____

13

Complete the table. A customer is chosen at random. Given that the customer paid by card, find the probability that they bought juice.

	Coffee	Tea	Juice	Total
Card	24			48
Cash		10	16	
Total	30	25		80

Answer _____

14

A climbing club has 60 members.
25 are juniors. 14 of the juniors and 21 of the seniors can lead a climb.
Complete the table. Given that a member can lead a climb, find the probability that they are a junior.

	Can lead	Cannot lead	Total
Junior			
Senior			
Total			

Answer _____

15

Max says the probability that a student plays netball, given that they are in Year 8, is $\frac{16}{30}$. Is Max right? Explain.

	Year 7	Year 8	Total
Football	18	12	30
Netball	14	16	30
Total	32	28	60

Answer _____

16

The table shows the customers at a café's two shops. Ali says a customer at the Station shop is more likely to order food, because more of them did. Is Ali right? Show how you know.

	Food	Drink only	Total
Station	36	54	90
Market	28	22	50
Total	64	76	140

Answer _____