

Constructing Two-Way Tables

(a)

A teacher asked two of her classes, 7A and 7B whether they were left or right handed.

In 7A, there were a total of 32 students and 11 of them were left-handed.

In 7B there were 19 right-handed students.

Across both classes, there was a total of 23 left-handed students.

(a) Complete a two-way table to show this information.

	Left	Right	Total
7A	11	21	32
7B	12	19	31
Total	23	40	63

(b) A student is chosen at random. Find the probability that they are left-handed. $\frac{23}{63}$

(c) A right-handed student is chosen at random. Find the probability that they are in 7A. $\frac{21}{40}$

(b)

A librarian surveyed 100 people of different ages to find out their preferred type of fiction – crime, romance or fantasy.

Of the 36 under 40s who answered the survey, 11 preferred crime fiction.

A total of 28 people preferred romance novels.

Of the people who were aged 40 or over, 9 preferred romance and 22 preferred fantasy fiction.

(a) Complete a two-way table to show this information.

	Crime	Romance	Fantasy	Total
Under 40s	11	19	6	36
40 or over	33	9	22	64
Total	44	28	28	100

(b) A person is chosen at random. Find the probability that they are under 40 and prefer either romance or fantasy fiction. $\frac{25}{100}$

(c) A person who prefers crime fiction is chosen at random. Find the probability that they are aged 40 or over. $\frac{33}{44}$

(c)

A teacher recorded the mock exam grades received for A-level Mathematics by students in each of her two classes.

There were two more students in class Y than in class X.

Class X contained 28 students and received 11 B grades.

Students in class Y receives twice as many A grades as those in class X.

The total number of students who got grade C was 15, and 7 of these students were in class Y.

(a) Complete a two-way table to show this information.

	Grade A	Grade B	Grade C	Total
Class X	9	11	8	28
Class Y	18	5	7	30
Total	27	16	15	58

(b) A member of class X is chosen at random. Find the probability that they received a grade B or a grade C. $\frac{19}{28}$

(c) All students that obtained a grade C will be required to re-sit their exam. If a student is chosen at random, what is the probability that they will not have to resit their exam? $\frac{43}{58}$