

## 2.2) Conditional probability

## Worked example

A group is made up of 62 men and 48 women. 32 of the men and 46 of the women are right-handed.

- a) Draw a two-way table to show this information.
- b) One person is chosen at random. Find:
  - i)  $P(\text{right-handed})$
  - ii)  $P(\text{right-handed} \mid \text{woman})$
  - iii)  $P(\text{man} \mid \text{right-handed})$

## Your turn

A group is made up of 42 men and 68 women. 36 of the women and 24 of the men are left-handed.

- a) Draw a two-way table to show this information.
- b) One person is chosen at random. Find:
  - i)  $P(\text{left-handed})$
  - ii)  $P(\text{left-handed} \mid \text{man})$
  - iii)  $P(\text{woman} \mid \text{left-handed})$

a)

	<b>L</b>	<b>L'</b>
<b>M</b>	24	18
<b>W</b>	36	32

b)

i)  $\frac{60}{110} = \frac{6}{11}$

ii)  $\frac{24}{42} = \frac{4}{7}$

iii)  $\frac{36}{60} = \frac{3}{5}$

## Worked example

The following two-way table shows what foreign language students in Year 9 study.

$G$  is the event that the student is a girl.

$S$  is the event they chose Spanish as their language.

	$G$	$G'$
$S$	18	34
$S'$	16	32

Determine:

- a)  $P(S'|G)$
- b)  $P(G'|S)$

## Your turn

The following two-way table shows what foreign language students in Year 9 study.

$B$  is the event that the student is a boy.

$F$  is the event they chose French as their language.

	$B$	$B'$
$F$	14	38
$F'$	26	22

Determine:

- a)  $P(F|B')$
- b)  $P(B|F')$

a)  $\frac{38}{60}$

b)  $\frac{26}{48}$