

## Sample space

The set of all possible outcomes.

Eg. Rolling 2 dice and adding the scores together.

+	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12



## Year 8 Higher topic 8

### Probability

What careers would use these skills?

Market research analyst, meteorologist, statistician, financial analyst, epidemiology, medical research.

## Definitions

**Mutually exclusive events** are events that can't happen at the same time.

**Independent events** one event doesn't influence another.

**Conditional probability** one event affects another and probabilities change.

**Exhaustive events** cover the entire

## P (event wont happen)

=  $1 - P(\text{event happens})$

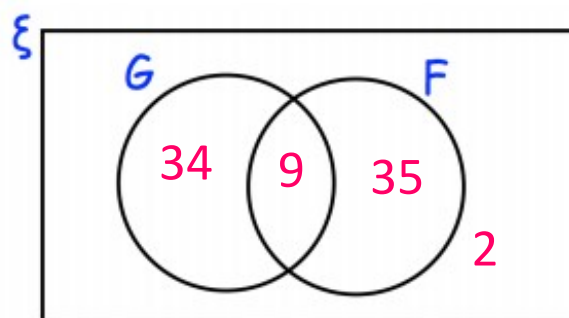
$P(A')$  refers to the probability that event A will not occur.

$P(A \cup B)$  refers to the probability that event A or B or both will occur.

$P(A \cap B)$  refers to the probability that both events A and B occur.

## Venn diagrams

A Venn Diagram shows the relationship between a group of different things and how they overlap. (You may be asked to shade Venn Diagrams as shown below)



Eg. There are 80 students in year 11. 9 students study French and German. 35 students only study French 2 students do not study French or German.

## Two way tables

Tables used to compare the relationship between two discrete data categories.

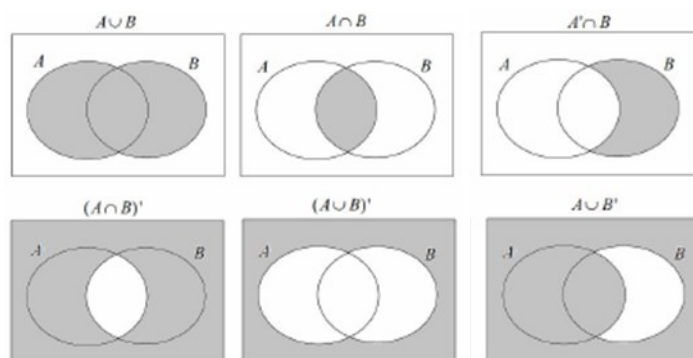
The rows and columns add up to the same total.

	Walk	Car	Other	Total
Boy	15		14	54
Girl		8	16	
Total	37			100

## Set theory

$(A \cup B)$  means 'A or B or both' (called **Union**)

$(A \cap B)$  means 'A and B' (called **intersection**)



## Tree diagrams (basic)

Tree diagrams show all the possible outcomes of an event and calculate their probabilities.

All branches must add up to 1 when adding downwards.

This is because the probability of something not happening is 1 minus the probability that it does happen.

Multiply going across a tree diagram.

Add going down the tree diagram.

