## Venn Diagrams – GCSE Maths

### Section 1
(1) There are 27 students in a class. 16 of the students like maths and 10 like English. Given that 4 students like both subjects, find out how many liked neither.

(2) There are 31 people in an office. 15 of the people like sport, 14 like music and 9 like both sport and music. Find out how many people in the office (a) Didn't like either sport or music and (b) Only liked sport.

(3) There are 34 people at a party. 15 bring crisps and 17 bring drinks. There are 3 people who bring both crisps and drinks. Find out (a) How many people brought neither crisps nor drinks. (b) How many people only brought crisps.

(4) There are 53 toys in a box. 33 of the toys are plastic and 12 of the toys are black. 3 of the toys are both plastic and black. (a) Find out how many toys are neither plastic nor black. One toy is taken at random. Find the probability that the toy is plastic but not black.

(5) There are 40 students in a class. 16 of the students only do maths and 8 of the students do both maths and English. Given that 4 do neither maths nor English, find out how many students do English but not maths.

### Section 2
(1) There are 27 students in a class.
16 do English
10 do maths
5 do neither maths nor English.
How many students do both maths and English?

(2) There are 33 toys in a box
17 are plastic
25 are black
2 are neither black nor plastic.
(a) Find out how many of the toys are both plastic and black.
(b) One toy is chosen at random. Find the probability that the toy is black but not plastic.

(3) There are 33 people at a party.
10 take Coke
12 take Fanta
14 take neither Fanta nor Coke.
(a) Find out how many people take both Fanta and Coke.
(b) Write down the ratio of the number of people who take Fanta to the number of people who take Coke.
(c) What % of the people at the party took Coke only.

### Section 3
(1) Draw a Venn Diagram to show the sets below
$\xi = \{1, 2, 3, 4, 5, 6\}$
$A = \{3, 4, 5\}$
$B = \{1, 4, 6\}$

(2) Draw a Venn Diagram to show the sets below
$\xi = \{a, b, c, d, e, f, g, h\}$
$A = \{a, c, d, f\}$
$B = \{b, c, e, f\}$