Set - a collection of items or things. Written using braces or curly brackets { and }

A = {2, 3, 5, 6}
B = {even numbers}
C = {countries}
D = {vegetables}

(Can have an empty set - a set with not members. Symbols used are { })

(Also Universal set is the set that defines possibilities for sets. Symbol used is $\mathcal{U}$.)

Element - a member of a set; the individual objects in a set. Symbol used is $\in$.

Set A = {1, 3, 5, 7, 9}

$1 \in A$

$7 \in A$

$2 \notin A$

$3 \in A$

Subset - a part of another set. When all the elements of a set are also members of another set. Symbol used is $\subset$.

Set A = {2, 4, 6, 8, 10}
Set B = {0, 2, 3, 4, 5}

{4, 6, 10} $\subset$ Set A
{0, 2} $\subset$ Set B
{3, 5} $\not\subset$ Set A
Set B $\not\subset$ Set A

{ } $\subset$ Set B

Complement - a set of elements that are NOT in a given set. Symbols used are A' or $\overline{A}$.

$U = \{0, 1, 2, 3, 4, 5, 6, 7\}$
$A = \{0, 1, 2, 3\}$
$B = \{4, 5, 6\}$

$A' = \{4, 5, 6, 7\}$
$\overline{B} = \{0, 1, 2, 4, 7\}$

$(A \cup B)' = \{7\}$
$(A \cap B)' = \{0, 1, 2, 3, 4, 5, 6\}$

Union - all of the elements from two (or more) sets. Sumbol used is U.

M = {1, 2, 3}
N = {2, 4, 6}
P = {2, 3, 5, 6}

M U N = {1, 2, 3, 4, 6}
N U P = {2, 3, 4, 5, 6}
M U P = {1, 2, 3, 5, 6}

Intersection - the elements that two (or more) sets have in common. Symbol used is $\cap$.

$M = \{1, 2, 3\}$
$N = \{2, 4, 6\}$
$P = \{2, 3, 5, 6\}$

$M \cap N = \{2\}$
$N \cap P = \{2, 6\}$
$M \cap P = \{2, 3\}$