

So we could replace the statement "a is belong to the alphabet" with $a \in \{\text{alphabet}\}$ and replace the statement "3 is not belong to the set of even numbers" with $3 \notin \{\text{Even numbers}\}$

Now if we named our sets we could go even further. Give the set consisting of the **alphabet** the name A, and give the set consisting of **even numbers** the name E. We could now write

$$a \in A$$

and

$$3 \notin E.$$

Problem

Let $A = \{2, 3, 4, 5\}$ and $C = \{1, 2, 3, \dots, 8, 9\}$, Show that A is a proper subset of C.

Answer

Each element of A belongs to C so $A \subseteq C$. On the other hand, $1 \in C$ but $1 \notin A$. Hence $A \neq C$. Therefore A is a proper subset of C.

There are three ways to specify a particular set:

- 1) By list its members separated by commas and contained in braces $\{ \}$, (if it is possible), for example, $A = \{a, e, i, o, u\}$
- 2) By state those properties which characterize the elements in the set, for example, $A = \{x: x \text{ is a letter in the English alphabet, } x \text{ is a vowel}\}$
- 3) Venn diagram: (A graphical representation of sets).

