Mathematics Notes

1. Indices, Surds & Radicals

Definitions

Indices

About the notation a^n:

- a - base
- n - index

Surds and Radicals

Surds: the square roots of the numbers that cannot be simplified into a whole or rational number

Natural domain of radicals: write $\sqrt[n]{a}$, where n is even, then $a \geq 0$

Theorem

Equality of Surds

$a + \sqrt{n} = b + \sqrt{m} \iff a = b \; and \; \sqrt{n} = \sqrt{m}$

2. Sets & Venn Diagrams

Definitions

Set: a collection of objects or things

- Subset: every element of a subset is also an element of the original set
  - Write as $A \subseteq B$
- Universal set: the set of all elements under consideration
  - Write as U
- Complement set: the set of all elements of U which are not in the original set
  - The complement set of S is written as S'
- Empty set: a set that has no elements
  - Write as Ø (phi)

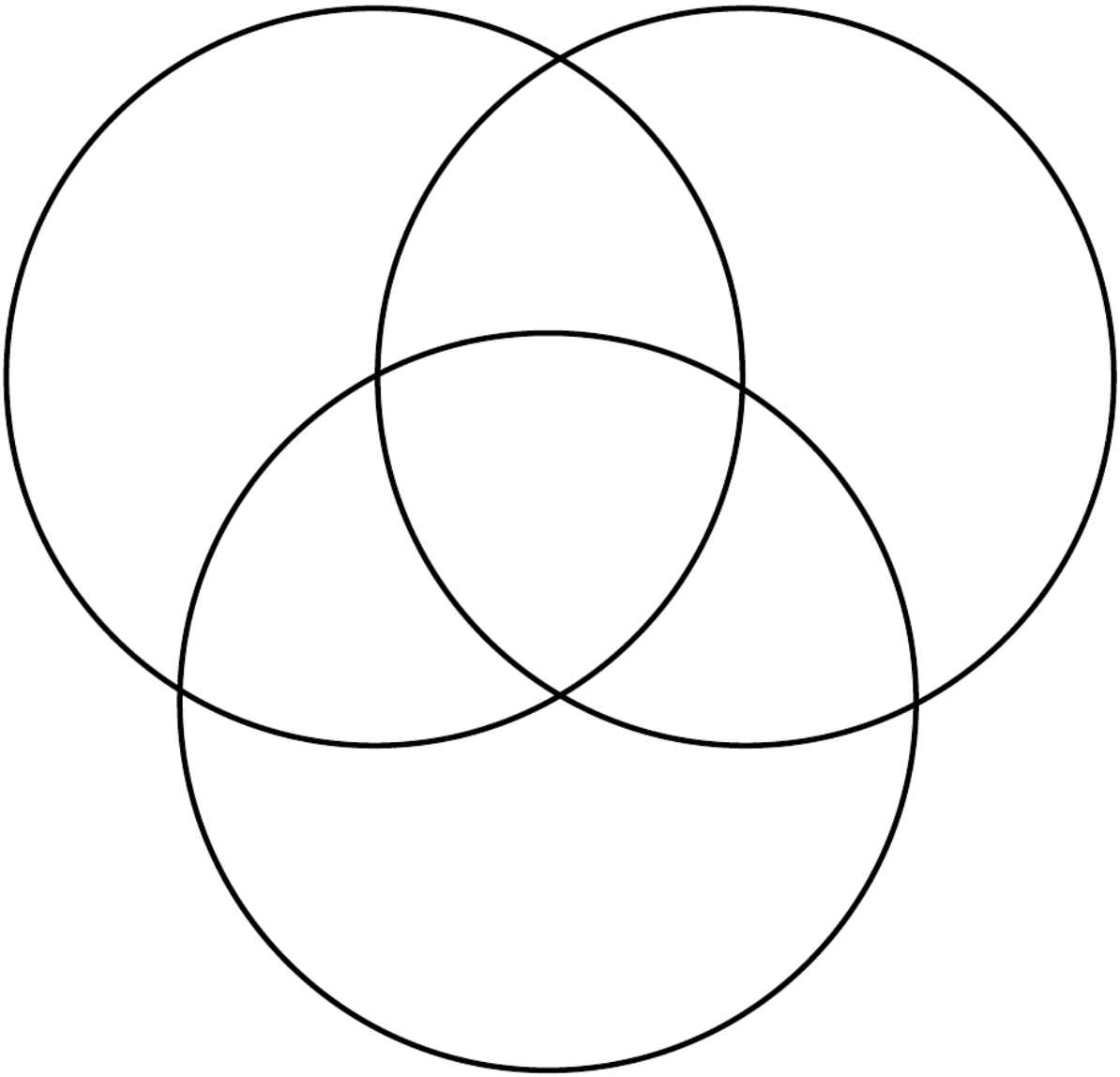
Notations

$\mathbb{N}$	natural number
$\mathbb{Z}$	integer
$\mathbb{Z}^+$	positive number
$\mathbb{Z}^-$	nagative number

$\mathbb{Q}$ rational number

$\mathbb{R}$ real number

Venn Diagrams



(*EASY TO UNDERSTAND, NO NEED TO EXPLAIN*)