1.1 Notation and Terminology

The following is a summary of commonly used symbols and terminology.

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QUANTIFIERS
   \forall – for all
   \exists – there exists
   TERMINOLOGY
   Theorem (or Proposition) – a proven mathematical statement
         this is usually of the form if such and such then so and so
         the Hypothesis is such and such
         the Conclusion is so and so
   Lemma – a little theorem.
   Corollary – a mathematical statement which follows from a previous theorem.
   \mathbb{N} – natural numbers \{1, 2, 3, \dots\}
   \mathbb{Z} - integers \{\ldots, -3, -2, -1, 0, 1, 2, 3, \ldots\}
   \mathbb{Q} – rational numbers e.g. 1, \frac{1}{2}, -\frac{1}{3} etc.
   \mathbb R – real numbers
(rational numbers and irrational numbers e.g. \pi = 3.14159..., \sqrt{2} = 1.41421...)
   \mathbb{C} – complex numbers a+ib where a,b are real and i=\sqrt{-1}
   \emptyset – the empty set \{\}
   \in - is a member of (is in e.g. -1 \in \mathbb{Z}, \sqrt{2} \in \mathbb{R})
    \notin - is not a member of (is in e.g. -1 \notin \mathbb{N}, \sqrt{2} \notin \mathbb{Q})
   \cup – union (things that are in either or both of the sets)
   \cap – intersection (things that are in both sets)
   \subseteq - is a subset of subset (is contained in, meaning one set is inside another)
    \subsetneq - is a subset of proper subset (is strictly contained in, meaning the sets are not equal)
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1.2 Greek letters

In this module and throughout mathematics you will encounter numerous Greek letters. Here is a table so that you know what they all are and how they are called.

A	В	Γ	Δ	\mathbf{E}	\mathbf{Z}
α	β	γ	δ	ϵ or ε	ζ
Alpha	Beta	Gamma	Delta	Epsilon	Zeta
Н	Θ	I	K	Λ	M
П	Θ	1	K	Λ	M
η	heta	ι	κ	λ	μ
Eta	Theta	Iota	Kappa	Lambda	Mu
N	Ξ	O	П	P	Σ
ν	ξ	O	π	ho	σ
Nu	Xi	Omicron	Pi	Rho	Sigma
${f T}$	Y	Φ	X	Ψ	Ω
au	v	ϕ or φ	χ	ψ	ω
Tau	Upsilon	Phi	Chi	Psi	Omega