

1.1 Introduction to Real Numbers

set - collection of objects

element - an object in a set

\mathbb{N} natural #'s - counting #'s
 $\{1, 2, 3, 4, \dots\}$

prime - only factors are 1 and itself $\{2, 3, 5, \dots\}$

composite: $\{4, 6, 8, 9, \dots\}$

\mathbb{Z} integers - set of all positive & negative whole #'s
 $\{\dots, -3, -2, -1, 0, 1, 2, 3, \dots\}$

\mathbb{Q} rational numbers - set of all #'s that can be written as fractions

$$\left\{ \frac{p}{q} \mid p, q \in \mathbb{Z} \right\}$$

↑ "such that" is an element of

- set of all terminating or repeating decimals

irrational #'s - non-terminating, non-repeating decimals

e.g. $\pi \approx 3.14159\dots$

\mathbb{R} real #'s - all numbers that can be expressed as decimals
 - all rational and irrational #'s

