

## The Set of Real Numbers

### Rational numbers

(Form :  $\frac{p}{q}$  where  $p$  and  $q$  are Integers,  $q \neq 0$ )

Fractions  $\rightarrow \frac{1}{2}, -\frac{3}{5}, 5\frac{6}{7}$

Terminating decimals 2.56, 0.3

Repeating decimals 0.1616...

Perfect roots  $\rightarrow \sqrt{25}, \sqrt[3]{8}$

### Irrational numbers

(endless unpredictability)

Non-repeating, non-terminating decimal numbers

$\pi \approx 3.14159\dots$

$e \approx 2.71828\dots$

Non-perfect roots

$\sqrt{2} \approx 1.414312\dots$

$\sqrt[3]{12} \approx 2.28942\dots$

### Integers

(the negative and positive whole numbers and zero)

...-3, -2, -1, 0, 1, 2, 3, ...

### Whole numbers

(the counting numbers and zero)

0, 1, 2, 3, ...

### Natural numbers

(the original counters)

1, 2, 3, 4, ...