Exercise 1

Give an example of each of the following:

(a) A natural number

(b) An integer that is not a natural number

(c) A rational number that is not an integer

(d) An irrational number

Solution

A natural number is what you naturally use to count $(1, 2, 3, \ldots)$.

$$69 \text{ is an example}$$

The integers consist of all the natural numbers, zero, and their negatives $(\ldots, -3, -2, -1, 0, 1, 2, 3, \ldots)$.

$$-999 \text{ is an example}$$

A rational number is a ratio of integers.

$$\frac{1}{2} \text{ is an example.}$$

An irrational number is a number that goes on forever and can't be represented by a ratio.

$$\sqrt{3} = 1.73205\ldots \text{ is an example.}$$