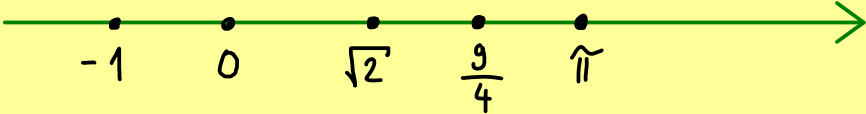




# The Bright Side of Mathematics

## Start Learning Complex Numbers - Part 1

Number line  $\mathbb{R}$  

- field  $+$   $\cdot$
- ordering  $\leq$  (Archimedean, compatible with  $+$  and  $\cdot$ , ...)
- complete

One can solve a lot of equations:

$$x + 5 = 1, \quad x + x = -1$$

$$x \cdot 5 = 1$$

$$x^2 = 2$$

We cannot solve:  $x^2 = -1$  (because  $x^2 \geq 0$  for all  $x \in \mathbb{R}$  and  $-1 < 0$ )

