But How?

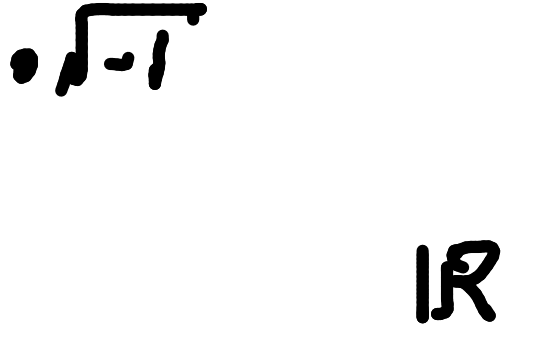
Complex Numbers

$=$

Real Numbers

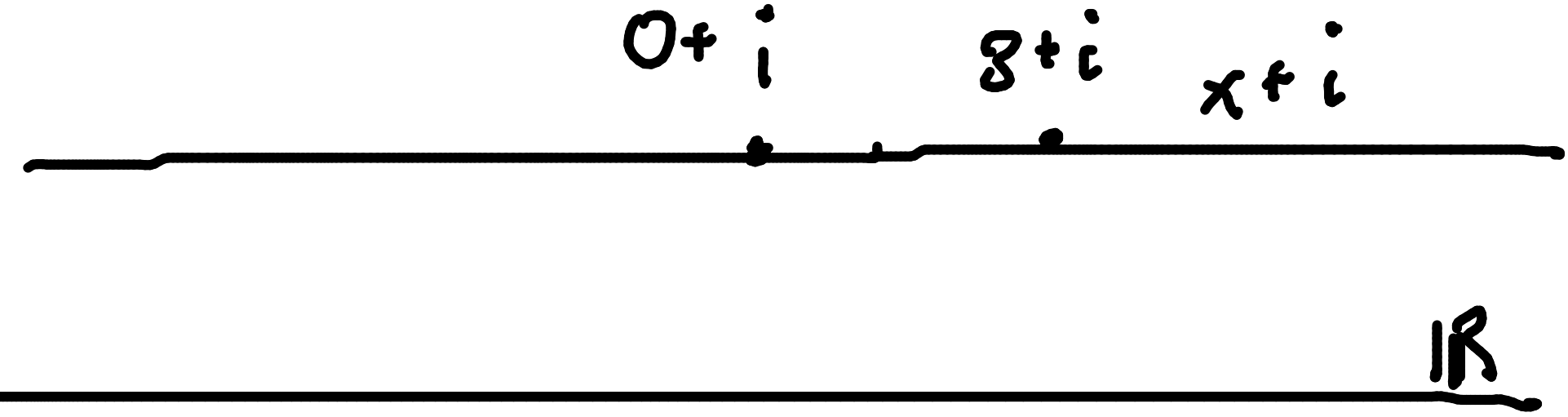
$+$

$\sqrt{-1}$



Generating Complex Numbers

- Start: $\mathbb{R} \subseteq \mathbb{C}$ and $\mathrm{i} \in \mathbb{C}$.
- Add: $3 + \mathrm{i} \in \mathbb{C}$, $x + \mathrm{i} \in \mathbb{C}$,



Story So Far

Complex Numbers

- Notation $\mathbb{C}$
- $z \in \mathbb{C}$ represented as $z = x + iy$ with $x, y \in \mathbb{R}$

Complex Conjugation

Division formula:

$$\frac{1}{x+\mathrm{i}y} = \frac{1}{x^2+y^2}(x-\mathrm{i}y)$$

$x - \mathrm{i}y$ is the complex conjugate of $x + \mathrm{i}y$
written: $\overline{x+\mathrm{i}y}$ $\overline{z}$