
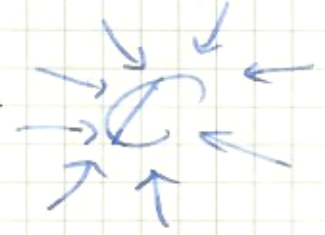


# Me, Myself and i

- $i^2 = -1$   DAS GEHT!! NICHT!! ... nicht in  $\mathbb{R}$

~~~~~> Nicht Panik machen

NEUE MENGE



$\mathbb{C}$  ... complex numbers  
but ... your personality is way more complex...

- IDEE 1 wie Polynome in  $X$ , nur dann in  $i$ , und jedes mal wenn ein  $i^2$  erscheint

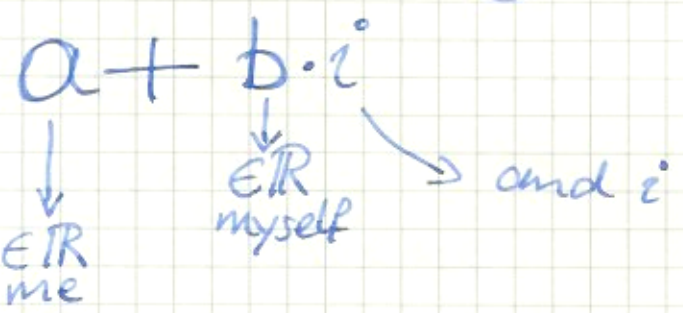
$$\boxed{i^2 \mapsto -1}$$



Ü:  $i^3 = \dots$   $i^4 = \dots$   $i^5 = \dots$   
 Ü:  $i^{2n} = (-1)^n$   $i^{4n} = 1$



Allgemeine Form



Ü:  $(2+3i) - (18+i) =$   
 $(\sqrt{2} - \sqrt{3} \cdot i)(\sqrt{2} + \sqrt{3} \cdot i) =$   
 $(1+2i) \cdot (3+4i) =$

- IDEE 2  $a + b \cdot i \approx (a|b)$   
 $\mathbb{C}$   $\mathbb{R}^2$

\* Houston, we've got a 2D number!  
 \* Who is it?  
 \* I!  
 \* YOU?