Complex Numbers (Recap)
Complex Numbers – Basics

• Imaginary unit $i$:
  
  $i \cdot i = -1$
Complex Numbers – Basics

• Imaginary unit $i$:
  \[ i \cdot i = -1 \]

• $z \in \mathbb{C}$ can be represented as
  \[ z = x + iy \text{ for } x, y \in \mathbb{R} \]
Complex Numbers – Basics
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\[ z = x + iy \]
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\[ z = x + iy \]

\[ |z| = \sqrt{x^2 + y^2} \]
Complex Numbers – Basics

$z = x + yi$

- $|z|$: Magnitude of $z$
- $\arg(z)$: Argument of $z$

![Diagram of complex numbers](image)
Complex Numbers – Basics

```
Im

|z|  y  

arg(z)  x

Re
```