

$$\underline{i^2 = -1 \text{ Testfall}}$$

$$z_1 := 0 + 1i, \quad z_2 := 0 + 1i$$

$$z_1 \cdot z_2 = (0 + 1i) \cdot (0 + 1i)$$

$$\Leftrightarrow = 0 \cdot (0 + 1i) + 1i \cdot (0 + 1i)$$

$$\Leftrightarrow = 1i \cdot (0 + 1i)$$

$$\Leftrightarrow = 1i \cdot 1i$$

$$\Leftrightarrow = i \cdot i$$

$$\Leftrightarrow = i^2 \quad \rightarrow \underline{z_1 \cdot z_2 = i^2}$$

$$z_1 \cdot z_2 = (ac - bd) + (ad + bc)i$$

$$\Leftrightarrow = (0 \cdot 0 - 1 \cdot 1) + (0 \cdot 1 + 1 \cdot 0)i$$

$$\Leftrightarrow = 0 - 1 + 0 \cdot i$$

$$\Leftrightarrow = -1$$

$$\Rightarrow \underline{z_1 \cdot z_2 = -1 = i^2}$$