

Umrechnungen Eulersche Form:

$$z_1 := 3 + j \cdot 4 \quad |z_1| = 5 \quad \arg(z_1) = 53.13^\circ \text{Grad}$$

$$z_2 := 2 - j \cdot 3 \quad |z_2| = 3.606 \quad \arg(z_2) = -56.31^\circ \text{Grad}$$

$$z_3 := 5 + j \cdot 6 \quad |z_3| = 7.81 \quad \arg(z_3) = 50.194^\circ \text{Grad}$$

$$z_4 := -5 - j \cdot 6 \quad |z_4| = 7.81 \quad \arg(z_4) = -129.806^\circ \text{Grad}$$

$$z_5 := 2 + j \cdot 3 \quad |z_5| = 3.606 \quad \arg(z_5) = 56.31^\circ \text{Grad}$$

$$z_6 := 0 + j \cdot 5 \quad |z_6| = 5 \quad \arg(z_6) = 90^\circ \text{Grad}$$

a)

$$z_a := \frac{z_1}{z_2} + z_3$$

$$\frac{z_1}{z_2} = -0.462 + 1.308j \quad \left| \frac{z_1}{z_2} \right| = 1.387 \quad \arg\left(\frac{z_1}{z_2}\right) = 109.44^\circ \text{Grad}$$

$$z_a = 4.538 + 7.308j$$

b)

$$z_b := \frac{z_1 + z_4}{z_5} + z_6$$

$$z_1 + z_4 = -2 - 2j \quad \left| \frac{z_1 + z_4}{z_5} \right| = 0.784 \quad \arg\left(\frac{z_1 + z_4}{z_5}\right) = 168.69^\circ \text{Grad}$$

$$z_b = -0.769 + 5.154j$$

c)

$$z_c := \frac{z_1 - z_3}{z_2^2}$$

$$z_1 - z_3 = -2 - 2j \quad |z_1 - z_3| = 2.828 \quad \arg(z_1 - z_3) = -135^\circ \text{Grad}$$

$$z_2^2 = -5 - 12j \quad |z_2^2| = 13 \quad \arg(z_2^2) = -112.62^\circ \text{Grad}$$

$$z_c = 0.201 - 0.083j$$

$$|z_c| = 0.218 \quad \arg(z_c) = -22.38^\circ \text{Grad}$$