

LÖSUNG ZU 959:

a)

$$z_1 = 2 + 2i \qquad z_2 = -1 + i$$

Polardarstellung der komplexen Zahlen:

$$z_1 = \sqrt{2^2 + 2^2} = \sqrt{8}$$

$$\varphi_1 = \arctan\left(\frac{2}{2}\right) = 45^\circ \qquad z_1 = (\sqrt{8}; 45^\circ)$$

$$z_2 = \sqrt{1^2 + 1^2} = \sqrt{2}$$

$$\varphi_2 = \arctan\left(\frac{1}{-1}\right) + 180^\circ = 135^\circ \qquad z_2 = (\sqrt{2}; 135^\circ)$$

$$z_1 \cdot z_2 = (\sqrt{8}; 45^\circ) \cdot (\sqrt{2}; 135^\circ) = (\sqrt{8 \cdot 2}; 45^\circ + 135^\circ) = (4; 180^\circ) = -4$$

