

Vet $|z|=2$. Visa $z + \frac{4}{z}$ reellt.

$$\underbrace{|z|^2 = z \cdot \bar{z} = 4} \Leftrightarrow \bar{z} = \frac{4}{z}$$

$$z + \frac{4}{z} \text{ reellt om } \overline{z + \frac{4}{z}} = \bar{z} + \frac{4}{\bar{z}} = z + \frac{4}{z}$$

Vi undersöker detta

$$\overline{z + \frac{4}{z}} = \frac{4}{\bar{z}} + \bar{z} = \frac{4}{\frac{4}{z}} + z = z + \frac{4}{z} \quad \text{ok.}$$

Anm: Räknereglerna

$$\overline{z + w} = \bar{z} + \bar{w}$$

$$\overline{z \cdot w} = \bar{z} \cdot \bar{w}$$

$$\overline{\frac{z}{w}} = \frac{\bar{z}}{\bar{w}}$$

bör man tänka igenom.

Alternativt kan man sätta $z = a + bi$.