

$$a) \quad \frac{x+yi}{y-xi} = \frac{(x+yi)(y+xi)}{(y-xi)(y+xi)} = \frac{xy + x^2i + y^2i - xy}{y^2 + x^2} =$$

$$= \frac{(x^2 + y^2)i}{x^2 + y^2} = i$$

$$b) \quad f(z) = \frac{a+bz}{c+dz} \quad \text{Lös } f(i) = i$$

Vi får

$$\frac{a+bi}{c+di} = i \Leftrightarrow a+bi = i(c+di) \Leftrightarrow$$

$$\Leftrightarrow a+bi = ic - d$$

Identifiera real- och imaginärdel:

$$\begin{cases} a = -d \\ b = c \end{cases}$$