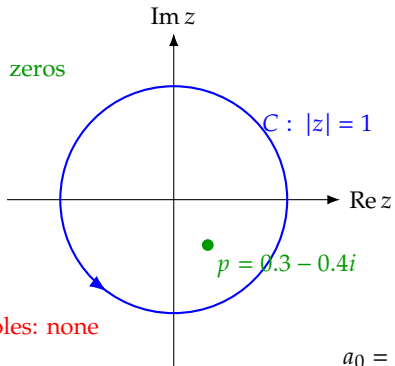
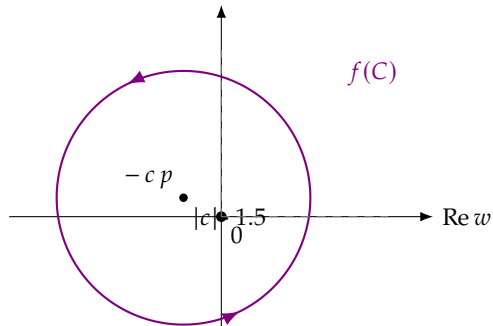


z-plane



$w = f_{\text{Im}}(z)$ -plane



$$f(z) = c(z - p), \quad c = 1 + 0.5i, \quad \text{ord}_p f = \frac{1}{2\pi} \oint_C d\theta_{z-p} = \frac{1}{2\pi} \oint_C \text{Im} \left(\frac{dz}{z - \bar{p}} \right) = 1.$$

$$a_0 = f(p) = \frac{1}{2\pi i} \oint_C \frac{f(\zeta)}{\zeta - p} d\zeta = 0, \quad a_1 = f'(p) = \frac{1}{2\pi i} \oint_C \frac{f(\zeta)}{(\zeta - p)^2} d\zeta = c.$$

$$\text{wind}(f(C), 0) = 1 \Rightarrow \oint_C \frac{f'(z)}{f(z)} dz = 2\pi i.$$