

Complex dynamics
Problem set 3 (due Tuesday, May 2)

1. Let $f(z) = \frac{1}{2} \sin z$. Show that $F(f) = A(0)$, where $A(0)$ is the attracting basin of the attracting fixed point 0.

Hint. Show that $\{z: |\operatorname{Im} z| < 2\} \subset A(0)$.

2. Let $f(z) = z + 1 + e^{-z}$ and $H = \{z: \operatorname{Re} z > 0\}$. Show that if $z \in F(f)$, then $f^n(z) \in H$ for all large n .