Prof. Dr. W. Bergweiler Summer semester 2016

Complex dynamics
Problem set 4 (due Tuesday, May 10)

1. Let $f(z) = \dfrac{\sin z}{z}$. Show that $f \in B$.

2. Let $f \in B$ and let F be the function obtained from f by the logarithmic change of variable. Suppose there exist $\mu > 0$ and $r_0 > 0$ such that $|f(z)| \leq \exp(|z|^\mu)$ for $|z| \geq r_0$. Which form does this condition take in terms of F?

   An entire function f, not necessarily in B, for which μ and r_0 as above exist is said to be of finite order. Show that if f is of finite order, then so is f'.