Math 561, Fall 2018
Assignment 7, due Wednesday, October 10

Hand in solutions to the following exercises:

1. Greene & Krantz, Chapter 3, Exercise #26.
2. Greene & Krantz, Chapter 3, Exercise #28.
3. Greene & Krantz, Chapter 3, Exercise #32.
4. Prove the following result involving a slight relaxation of the hypothesis in Theorem 3.4.4 of Greene & Krantz:

   If $f : \mathbb{C} \to \mathbb{C}$ is an entire function and if for some real number C and some $\alpha > 0$ it holds that

   $$|f(z)| \leq C|z|^\alpha \qquad \text{for all } |z| > 1,$$

   then f is a polynomial of degree $\lfloor \alpha \rfloor$ (the greatest integer less than or equal to α).

On your own: Greene & Krantz: Chapter 3, Exercises 21, 27, 29, 31, 36. Also the following problem:

1. Suppose $p(z) = a_3z^3 + a_2z^2 + a_1z + a_0$ is a complex polynomial in z of degree 3. If $|p(z)| \leq 1$ on the unit circle $\{z \in \mathbb{C} : |z| = 1\}$, show that $|a_3| \leq 1$.

Reading: Greene & Krantz 3.3-3.5.