
Complex analysis

Demonstration 6

2. 11. 2004

1. Prove Theorem 2.6 g).

2. Prove $\frac{d}{dz} \cos z = -\sin z$.

3. Prove $\cos(z + \zeta) = \cos z \cos \zeta - \sin z \sin \zeta$.

4. Let $\sum_{n=0}^{\infty} a_n(z - z_0)^n$ be a power series with radius of convergence R . Show that

$$\frac{1}{R} = \limsup_{n \rightarrow \infty} \sqrt[n]{|a_n|}.$$