Assignment 10

MA06 Complex Analysis Deadline 11:59 AM, 20190122

1. Find the circle and radius of convergence of the given power series.

   (a) $\sum_{k=0}^{\infty} \frac{1}{(1-2i)^{k+1}}(z-2i)^k$

   (b) $\sum_{k=1}^{\infty} \frac{1}{k}\left(\frac{i}{1+i}\right) z^k$

2. Expand the given function in a Maclaurin series. Give the radius of convergence R of each series.

   (a) $f(z) = \frac{z}{1+z}$

   (b) $f(z) = \frac{1}{(1+2z)^2}$

3. Expand the given function in a Taylor series centered at the indicated point z_0. Give the radius of convergence R of each series.

   (a) $f(z) = \frac{1}{z}, z_0 = 1$

   (b) $f(z) = \frac{1}{1+z}, z_0 = -i$

Notice: Please write Your Name and Student ID when you submit.