MA 16200 Quiz 20
Approximating Functions with Polynomials, Properties of Power Series
April 9, 2020

1. Find the interval of convergence for the following series:

$$\sum_{n=1}^{\infty}(-1)^n\frac{(x-2)^n}{n}$$

2. Find the radius of convergence for the following series:

$$\sum_{k=1}^{\infty}\frac{k^2(x+1)^k}{(k+2)3^{2k}}$$

3. Find the remainder term R_n in the nth-order Taylor polynomial centered at $a = 0$ for the given function. Express the result for a general value of n.

$$f(x) = e^{2x}$$

Now, use the remainder term to estimate the absolute error $|f(-0.1) - p_2(-0.1)|$.