

This quiz is due Tuesday, October 25th at the beginning of class. Use additional paper as necessary to submit CLEAR and COMPLETE solutions.

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

(a) 
$$\sum_{n=0}^{\infty} \frac{(-1)^n}{(2n)!} x^n$$

(b) 
$$\sum_{n=0}^{\infty} n^n (x+1)^n$$

(c) 
$$\sum_{n=0}^{\infty} \frac{(-2)^n n}{\sqrt{n^3+1}} (x-1)^n$$

2. Find the radius of convergence of the power series  $\sum_{n=0}^{\infty} \frac{n^n}{n!} x^n$ .

3. Find the  $N$ th degree Taylor polynomial for  $-\ln(1-x)$  centered at  $x=0$ .