

Homework 3

Math 232 section 006

Due: Tuesday, September 18th, 2007

Name: _____

1. Find the interval of convergence for $f(x) = -\sum_{n=1}^{\infty} \frac{(x-2)^n}{5n}$.

2. Find the radius of convergence for $f(x) = \sum_{n=0}^{\infty} \frac{n(x-1)^n}{n^2+1}$.

5. Find Taylor series for the following functions. What is the radius of convergence for those series?

(a) $f(x) = x^3 e^{-x}$ about the point $x = 0$

(b) $f(x) = \frac{x^2}{1-x^2}$ about the point $x = 0$

6. Compute the following integral. Simplify as much as possible.

$$\int_0^1 \frac{\sin(x)}{x} dx$$