

Math 31 Summer 2019

Quiz ϕ^2

July 23, 2019

1) Determine a power series for the following function. Determine its radius and interval of convergence. **Hint: To determine radius/interval of convergence we need only worry about the infinite summation.**

$$x^2 \ln(\sqrt[7]{7x^3 + 9})$$

2) Approximate the following definite integral using the first four terms of its power series expansion. How many terms do we need to be within $\frac{1}{1,000,000}$ of the actual value of the integral?

$$\int_0^1 \left(x^2 \ln(\sqrt[7]{7x^3 + 9}) \right) dx$$