Quiz 21

April 16, 2020

Attempt to do the following problems within $10 - 12$ minutes.

1. Find the power series representation for $\frac{x}{x^2-1}$ centered at 0 and use this to determine the power series representation for $\ln(x^2 - 1)$.

2. We know the power series representation for e^x centered at 0 is $\sum_{k=0}^{\infty} \frac{x^k}{k!}$. Using this, determine the power series representation for $2xe^x$ centered at 0 and determine the radius of convergence.

3. Determine the radius of convergence for the following power series representation: $e^x = \sum_{k=0}^{\infty} \frac{x^k}{k!}$