

You will have 3 points by writing your name on the quiz, so I know you come. Justify your answers algebraically whenever possible; please do not use calculators.

You have 15 minutes to take this 20 point quiz.

1. (4 points) Find the radius of convergence: $\sum_{n=1}^{\infty} (-1)^n \frac{n^2 x^n}{2^n}$.

2. (5 points) Let the power series expansion of $f(x) = \frac{3x}{(1-x^3)}$ be the following: $\sum_{n=0}^{\infty} c_n x^n$

What is the coefficient of the first non-zero term in the above series?

3. (8 points) Find the sum of $\sum_{n=0}^{\infty} (n+1)x^n$

Hint: Integrate term by term.