NAME:

Show ALL your work CAREFULLY.

(a) Find the interval of convergence of the following power series [Do not forget to check the endpoints!].

\[ \sum_{n=1}^{\infty} \frac{(x - 1)^n}{n^3} \]

(b) Find a power series representation of \(\ln(x + 1)\). [What is the derivative of \(\ln(x + 1)\)? Recall that \(\frac{1}{1-t} = \sum_{n=0}^{\infty} t^n \) for \(|t| < 1\).]