1. Find the interval and radius of convergence of $\sum_{n=1}^{\infty} \dfrac{(2x-1)^n}{n^3}$.

2. Find the maximum error in approximating the sum of the series $\sum_{n=1}^{\infty} \dfrac{(-1)^n n}{5^n}$ using the first four terms.

3. Find the sum of the series $\sum_{n=0}^{\infty} \dfrac{x^n}{2^n(n+1)!}$ for $x \neq 0$.

4. Approximate $tan^{-1}1$ using only the first three nonzero terms.

With My Best Wishes