

Q1. Find the sum and the Interval of convergence for $\sum_{n=1}^{\infty} \frac{x^n}{n}$



Q2. Use (Q1) to find the sum of $\sum_{n=1}^{\infty} \frac{(-1)^n}{3^{n-1} n}$



Q1. Find the sum and the Interval of convergence for $\sum_{n=0}^{\infty} (n+1)x^n$



Q2. use (Q1.) to find the sum of $\sum_{n=0}^{\infty} \frac{(-1)^{n+1}(n+1)}{2^n}$



Q1. Evaluate $f''(2)$, if $f = \sum_{n=0}^{\infty} \frac{(-1)^n (2n)!}{(n+1)!} (x-2)^{n+1}$.



Q2. Find the power series (centered at 0) for $\frac{2}{3x-2}$

