

# Worksheet 14

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Find the radius of convergence and the interval of convergence of the series

1.  $\sum_{n=0}^{\infty} \frac{(-1)^n x^n}{n+1}$ .

5.  $\sum_{n=1}^{\infty} \frac{n^2(2x-3)^n}{2 \cdot 4 \cdot 6 \cdots (2n)}$ .

2.  $\sum_{n=1}^{\infty} \frac{10^n x^n}{n^3}$ .

6.  $\sum_{n=1}^{\infty} \frac{(4x+1)^n}{n^2}$ .

3.  $\sum_{n=1}^{\infty} \frac{(x-2)^n}{n^n}$ .

7.  $\sum_{n=1}^{\infty} n!(2x-1)^n$ .

4.  $\sum_{n=2}^{\infty} \frac{(-1)^n x^n}{4^n \ln n}$ .

8.  $\sum_{n=2}^{\infty} \frac{x^{2n}}{n(\ln n)^2}$ .