

5. [10 points] A power series centered at $x = -1$ is given by

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

The radius of convergence of this power series is 3 (do **not** show this). Find the **interval** of convergence of this power series. Show all your work, including full justification for series behavior.

Interval of convergence: _____