

Problems. January 25.

For the given power series, find the radius of convergence and interval of convergence.

1.

$$\sum_{n=0}^{\infty} (-1)^{n-1} \frac{x^n}{(n+1)3^n}.$$

2.

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

3.

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

4.

$$\sum_{n=1}^{\infty} \frac{(2n)!(2x+3)^n}{n5^n}.$$