

Math 102 — Power series

Summary. Try each of the following problems together in a small group.

Problem 1. For each of the following power series, find the interval and radius of convergence. Remember, you'll use the ratio test first, and then work with the endpoints of the interval separately.

a. $\sum_{n=1}^{\infty} \frac{(5x)^n}{n}$

b. $\sum_{n=1}^{\infty} (-1)^n \frac{(x-2)^n}{\sqrt{n}5^n}$

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

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

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