

**Powerful Series of Power Series (Lecture Assignment)**

Complete this assignment and submit it to Gradescope by 4:00pm on your class day. You can print this sheet, or write on your own paper. Contact us if internet connections or other issues require alternate arrangements.

Find a power series representation, and its radius of convergence, for the following functions:

1.  $f(x) = \frac{1}{8+x^3}$ . *Hint: rewrite  $f(x)$  to match the formula of the sum of a geometric series.*

2.  $g(x) = \frac{x^2}{8+x^3}$

3.  $g'(x) = \frac{16x - x^4}{(8+x^3)^2}$

**One-Minute Questions:** Write a sentence for each.

A. What's one mathematical question you have after watching the videos?

B. What's one interesting thing you learned from the book or videos?