Math 1152Q, Fall 2017 — 11.8 Intervals of convergence

Board work on Week 8, Friday, Oct 20, 2017

Exercise. For two of the most-difficult looking power series, do the following:

- state where the interval of convergence is centered
- find the *radius* of convergence (using the ratio test)
- find expressions for the series that correspond to the endpoints of the interval of convergence
- determine if these two series converge (using series tests we learned at the start of the semester)
- state the *interval* of convergence in interval notation

1. $\displaystyle\sum_{n=1}^{\infty} \frac{x^n}{n^3}$
2. $\displaystyle\sum_{n=1}^{\infty} \frac{x^n}{n^{1/4}}$
3. $\displaystyle\sum_{n=1}^{\infty} \frac{(x-1)^n}{n}$
4. $\displaystyle\sum_{n=1}^{\infty} \frac{x^{2n}}{(2n)!}$