Quiz #11, 4/13
Math 157 (Calculus II), Spring 2023

Problem 1 is worth 6 points (2 pts each part), and Problem 2 is worth 4 points (2 pts each part), for a total of 10 points. Remember to *show your work* on all problems!

1. For each of the following alternating series, decide (with explanation) if it: converges absolutely, converges conditionally, or diverges.

   (a) $\displaystyle\sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{2^n}$

   (b) $\displaystyle\sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{\sqrt{n}}$

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

2. For each of the following series, use the ratio test to decide if it converges or diverges.

   (a) $\displaystyle\sum_{n=1}^{\infty} \frac{3^n - n^3}{2^n + n^2}$

   (b) $\displaystyle\sum_{n=1}^{\infty} \frac{n^3}{2^n}$