Math 1B
Quiz 4

Clearly state the tests and facts you use (such as the convergence of a particular geometric series).

1. Determine if the series converges or diverges.

\[ \sum_{n=1}^{\infty} \frac{1}{\sqrt{n^2 + n}} \]

2. Determine if the series converges or diverges.

\[ \sum_{n=1}^{\infty} ne^{-n} \]

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Turn page for problem 3 →
3. a) Find a formula for the general term $a_n$ of the sequence $\left\{ \frac{2}{9}, \frac{4}{27}, \frac{8}{81}, \frac{16}{243}, \ldots \right\}$.

b) Determine if the series $\frac{2}{9} + \frac{4}{27} + \frac{8}{81} + \frac{16}{243} + \ldots$ converges. If so, find its value.