

# QUIZ 11

Time: 10min

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Fill in the blanks in the first three problems

1. The alternating series  $a_1 - a_2 + a_3 - a_4 + \dots$  will converge provided that the terms are decreasing in size and \_\_\_\_\_.
2. If  $\sum |u_k|$  converges, we say that the series  $\sum u_k$  converges \_\_\_\_\_; if  $\sum u_k$  converges but,  $\sum |u_k|$  diverges, we say that  $\sum u_k$  converges \_\_\_\_\_.
3. The premier example of a conditionally convergent series is \_\_\_\_\_.
4. Determine whether the series

$$\sum_{n=1}^{\infty} (-1)^{n+1} \frac{n^4}{2^n}$$

is conditionally convergent, absolutely convergent, or divergent.

*The first 3 problems are worth 4 points (one point per blank), and the last is worth 6 points.*