

1. (1 pt) For each of the following series, tell whether or not you can apply the 3-condition test (i.e. the alternating series test). If you can apply this test, enter D if the series diverges, or C if the series converges. If you can't apply this test (even if you know how the series behaves by some other test), enter N.

—1. $\sum_{n=1}^{\infty} \frac{(-1)^n(n^3+1)}{n^3+7}$

—2. $\sum_{n=1}^{\infty} \frac{(-1)^n \cos(n)}{n^2}$

—3. $\sum_{n=1}^{\infty} \frac{(-1)^n(n^3+1)}{n^4+1}$

—4. $\sum_{n=1}^{\infty} \frac{(-1)^n(n^{10}+1)}{e^n}$

—5. $\sum_{n=1}^{\infty} \frac{(-1)^n}{n^5}$

—6. $\sum_{n=1}^{\infty} \frac{(-1)^n(n^4+2n)}{n^3-1}$

2. (1 pt) Select the FIRST correct reason why the given series converges.

- A. Convergent geometric series
- B. Convergent p series
- C. Comparison (or Limit Comparison) with a geometric or p series
- D. Alternating Series Test
- E. Cannot apply any test done so far in class

—1. $\sum_{n=1}^{\infty} \frac{(-1)^n \ln(e^n)}{n^7 \cos(n\pi)}$

—2. $\sum_{n=1}^{\infty} \frac{\cos(n\pi)}{\ln(7n)}$

—3. $\sum_{n=1}^{\infty} \frac{(n+1)(48)^n}{7^{2n}}$

—4. $\sum_{n=1}^{\infty} (-1)^n \frac{\sqrt{n}}{n+10}$

—5. $\sum_{n=1}^{\infty} \frac{n^2 + \sqrt{n}}{n^4 - 10}$

—6. $\sum_{n=1}^{\infty} \frac{3(7)^n}{12^{2n}}$

3. (1 pt) Determine whether the following series converges or diverges.

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

Input C for convergence and D for divergence: ____

Note: You have only one chance to enter your answer.

4. (1 pt) Determine whether the series converges or diverges:

$$\sum_{n=1}^{\infty} (-1)^n \frac{2n}{9n+5}$$

Input C for convergence and D for divergence: ____

Note: You have only one chance to enter your answer.

5. (1 pt) Determine whether the following series converges or diverges.

$$\sum_{n=1}^{\infty} (-1)^{n-1} \frac{\sqrt{n}}{n+7}$$

Input C for convergence and D for divergence: ____

Note: You have only one chance to enter your answer.

6. (1 pt) Determine whether the following series converges or diverges.

$$\sum_{n=1}^{\infty} \frac{\cos(n\pi)}{n^{2/6}}$$

Input C for convergence and D for divergence: ____

Note: You have only one chance to enter your answer!