Math 151 - Week #11
Spring 2021
Apr'21

Name(Print) ______________________
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Section #/TA ____________

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1. Use the alternating series test to test the series for convergence or divergence.

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

   (b) $\sum_{n=2}^{\infty}(-1)^{n+1}ne^{-n}$

2. Determine whether the series is absolutely convergent or conditionally convergent.
   $\sum_{n=3}^{\infty}(-1)^{n-1}\frac{n}{n^2+4}$

3. Use the Ratio Test to determine whether the series is convergent or divergent.
   $\sum_{n=1}^{\infty}\frac{(-2)^n}{n^2}$

4. Test the series for convergence or divergence. Use the indicated test.

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

   (b) $\displaystyle\sum_{n=3}^{\infty} (-1)^n \frac{n^2-1}{n^3+1}$ (Alternating Series Test)

   (c) $\displaystyle\sum_{n=1}^{\infty} \frac{e^n}{n^2}$ (Test for divergence)

   (d) $\displaystyle\sum_{n=2}^{\infty} \frac{1}{n\sqrt{\ln n}}$ (Integral Test)

5. Find the radius of convergence and interval of convergence of the series.

   (a) $\displaystyle\sum_{n=0}^{\infty} \frac{x^n}{n!}$

   (b) $\displaystyle\sum_{n=0}^{\infty} \frac{(x-2)^n}{n^2+1}$