

Quiz 1

Mar 07, 2013

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1. For what value of $p > 0$ is the improper integral $\int_0^{\infty} \frac{1}{x^p} dx$ convergent? Explain.
2. State (need not prove) the integral test for series with positive terms ($a_n > 0$). Then give an example of a series that can be found convergent using this test.
3. State (need not prove) the ratio test for series with positive terms ($a_n > 0$). Then give an example of a series that can be found convergent using this test.
4. State (need not prove) the root test for series with positive terms ($a_n > 0$). Then give an example of a series that can be found convergent using this test.

The examples in the last 3 questions need not be different.

5. Is the series $\sum_{n=1}^{\infty} \frac{1}{n^{\sqrt{n}}}$ convergent? Explain.

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