

10.4 Integral Test for Convergence

Calculus

Name: _____

CA #2

- Use the Integral Test to determine the convergence or divergence of the series $\sum_{n=1}^{\infty} \frac{7}{n^{11}}$.
- Confirm the Integral Test can be applied to the series $\frac{5}{2} + \frac{5}{5} + \frac{5}{10} + \frac{5}{17} + \dots$ and use the Integral Test to determine the convergence or divergence of the series.
- Explain why the Integral Test does not apply to the series $\sum_{n=1}^{\infty} 4\left(\frac{1}{2}\right)^{-n}$.
- Prove the Integral Test applies to the series $\sum_{n=1}^{\infty} \frac{1}{\sqrt{n+2}}$. Determine the convergence or divergence of the series.
- Use the Integral Test to determine if the series $\sum_{n=2}^{\infty} \frac{4}{3n\sqrt{\ln n}}$ converges or diverges.

1. $\int_1^{\infty} f(x) dx = \frac{10}{7}$, Series Converges	2. $\int_1^{\infty} f(x) dx = \frac{5\pi}{4}$, Series Converges	3. $f(x)$ is not a decreasing function
4. $\int_1^{\infty} f(x) dx = \infty$, Series Diverges	5. $\int_2^{\infty} f(x) dx = \infty$, Series Diverges	