Problem Set #46

Jayden Li

January 31, 2025

Problem 3

(c) Converge, LCT to $\dfrac{\sqrt[3]{k}}{\sqrt{k^3}}$.

(d) Converge, DCT to $\dfrac{\pi/2}{n^{1.2}}$.

(e) Diverge by nth term divergence test.

(f) Diverge, LCT to $\dfrac{1}{n}$.

(g) Diverge by nth term divergence test.

(h) Converge, LCT to $\dfrac{\sqrt{n}}{n^2}$.

(i) Diverge, LCT to $\dfrac{n^2}{n^3}$.

(j) Converge, start with $n = 3$ and DCT with $\dfrac{2}{e^n}$.

(k) Diverge, LCT to $\dfrac{1}{n^2}$.

(l) Diverge, LCT to $\dfrac{1}{n}$.

Problem 4

When $p > 1$, the series converges by direct comparison to $1/n^p$.