

Show all work clearly and in order. Please box your answers.

1. Use the **limit comparison test** to determine if the following series converge or diverge

(a) $\sum_{n=2}^{\infty} \frac{1}{n^3 - 5}$

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

(c) $\sum_{n=1}^{\infty} \frac{n^2 - n + 1}{3n^5 - n^2 - 1}$

(d) $\sum_{n=3}^{\infty} \frac{n}{\sqrt{n^4 - 6}}$