Written HW12 – MATH 2502 Spring 2021

Due by 2 April for timely completion credit

In these problems use either the comparison test or the limit comparison test to determine whether the series converges or diverges. Full details must be provided (derivation of any inequalities used, full computation of any limits used, and relating precisely how your computations connect with whichever comparison theorem you decide to use).

1. $\displaystyle\sum_{k=1}^{\infty} \frac{k^3}{k^4 + 2k^2 + 1}$

2. $\displaystyle\sum_{k=2}^{\infty} \frac{\sqrt{n+2}}{n-1}$

3. $\displaystyle\sum_{k=1}^{\infty} \frac{n}{3^n + n}$