Written HW14 – MATH 2502 Spring 2021

Due by 9 April for timely completion credit

Use one of the numerous tests (test for divergence, geometric series, integral test, p-series, comparison test, limit comparison test, alternating series test, root test, or ratio test) to determine if the series converges or diverges. Make sure to give full explanation of why it converges or diverges using the test. Incomplete explanations will be returned for a revision.

1. $\displaystyle\sum_{k=0}^{\infty} \frac{1}{\sqrt{k^2+5}}$
2. $\displaystyle\sum_{k=1}^{\infty} \frac{(-1)^k k^2}{k^3+17}$
3. $\displaystyle\sum_{k=1}^{\infty} \frac{2^k}{k^k}$
4. $\displaystyle\sum_{k=1}^{\infty} \frac{k^2+5k+2}{k^2+2k+17}$
5. $\displaystyle\sum_{k=1}^{\infty} \frac{k}{e^{k^2}}$
6. $\displaystyle\sum_{k=1}^{\infty} \frac{4^k}{k!}$
7. $\displaystyle\sum_{k=1}^{\infty} \frac{k^k}{(2k+1)^k}$