Quiz: The Sixth

24 March 2015

This test totals 15 points. Good luck!

1. (12 pts) Find whether the following series converge/diverge. Mention any tests you use and show work.

(a) \[ \sum_{n=1}^{\infty} \left( \frac{1}{4n^2 + 1} \right) \]
(b) \[ \sum_{n=1}^{\infty} \left( \frac{1}{e^n} \right) \]
(c) \[
\sum_{n=1}^{\infty} (-1)^n \sin \left( \frac{\pi}{n} \right)
\]
2. (3 pts) Find an upper bound for $|R_7|$ for the alternating series

$$\sum_{n=1}^{\infty} (-1)^{n+1} \left( \frac{1}{e^n} \right)$$