MAC2312: Calculus 2 - Section 3

Test 4 Review August 5, 2015

1. Determine whether the following series are convergent or divergent.
   (a) $\sum_{n=1}^{\infty} \frac{\sqrt{n+1}}{n^2+1}$
   (b) $\sum_{n=1}^{\infty} \frac{n^2+1}{2^n}$
   (c) $\sum_{n=1}^{\infty} \frac{2^{n-1}3^{n+1}}{n^n}$
2. Find a value n so that s_n, the n^{th} partial sum of $\sum_{n=1}^{\infty} \frac{10}{(2n+1)^6}$, is within 10^{-5} of the sum of the series.
3. Find a power series representation of $\frac{1+x}{1-x}$ and determine the interval of convergence.
4. Find the Taylor series of $f(x) = \frac{1}{1-x}$ centered at $a = 3$ and the radius of convergence.