

Due Date: June 17, 2011 Friday

NAME:.....

Ali Sinan Sertöz

STUDENT NO:.....

Math 302 Complex Analysis II – Homework 2

1	2	TOTAL
10	10	20

Please do not write anything inside the above boxes!

Check that there are 2 questions on your booklet. Write your name on top of every page. Show your work in reasonable detail. A correct answer without proper or too much reasoning may not get any credit.

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Q-1) Discuss the convergence of $\sum_{n=0}^{\infty} \binom{2n+1}{n} x^n$, where x is a real number. Find the sum when it exists.

Solution:

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Q-2) Find the sum of $\sum_{n=0}^{\infty} \frac{1}{n^4 + 1}$. In general describe how to find $\sum_{n=0}^{\infty} \frac{1}{n^{2k} + 1}$, where k is a positive integer.

Solution: