Due Date: 13 May 2013, Monday NAME:.....

Ali Sinan Sertöz STUDENT NO:.....

Math 504 Complex Analysis II – Take-Home Exam 08

1	2	3	4	5	TOTAL
25	25	25	25	0	100

Please do not write anything inside the above boxes!

Check that there are **4** questions on your exam booklet. Write your name on top of every page. Show your work in reasonable detail.

For each question I will post the best student solution on the web. If there are more than one interesting solutions, I will post them all. Having your solution posted on the web will get you extra 10 points for each solution posted. These will be added to your total exam grades before an average is taken at the end of the semester.

NAME: STUDENT NO:

Q-1) On page 278 it says “Calculations similar to above give ...”. Prove one of these identities.

[page 315, Exercise 6A]

Solution:

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Q-2) Prove the claim on page 289 that the Riemann surface of $w = \sqrt{p(z)}$, where p is a polynomial of degree 4 with distinct roots, is conformally equivalent to $\mathbb{C}/\Omega$ for some lattice Ω.

[page 317, Exercise 6Q]

Solution:

NAME: STUDENT NO:

Q-3) Find the genus of the Riemann surface $\bar{\mathcal{U}}/\Gamma(n)$.

[page 317, Exercise 6M]

Solution:

NAME: STUDENT NO:

Q-4) The proof of Theorem 6.9.3 on page 301 is wrong! Find the error and give a correct proof.

Solution: