

Math 312 (Complex Analysis) – Week 11
Spring Term 2004
BUCKMIRE

Monday April 5 *Class 28:*

Cauchy's Second Residue Theorem and Introduction to Laurent Series.

We shall learn a really neat trick to evaluate contour integrals possessing finite many singularities, called *Cauchy's Second Residue Theorem*. Also, we shall be introduced to Laurent Series and be re-acquainted with Maclaurin Series for elementary functions, this time expanded to include complex inputs.

Reading:

Saff & Snider, (Section 5.1-5.3 and 6.1)

Wednesday April 7 *Class 29:*

Using Laurent Series. We shall look at how we can use Laurent series to help us compute residues of a function at $z = 0$ more simply, and thus evaluate contour integrals.

Reading:

Saff & Snider, (Section 5.5)

Friday April 9 *Class 30:*

Application of Residues. We can use our ability to compute residues to obtain the value of certain complicated real integrals, as well as, amazingly evaluate the sum of convergent infinite series.

Reading:

Saff & Snider, (Section 6.3 and 6.4)

Homework:

Quiz #10 **DUE MON APR 9**

HOMEWORK SET # 9 DUE TODAY