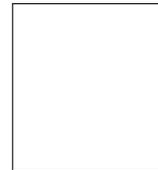




Bilkent University

Take-Home Exam # Final
Math 633 Algebraic Geometry
Due on: 10 January 2010 Friday
Instructor: Ali Sinan Sertöz



Name & Lastname:

Department:

Student ID:

Q-1) In Griffiths & Harris, *Principles of Algebraic Geometry*, on page 39, during the definition of the Čech cohomology, the authors claim that the induced map ρ on cohomology is independent of the choice ϕ . Prove this claim.

This is intended to give you a realistic taste of mathematics: you have to do some serious calculations before you say something simple as “the result is independent of the choice made”.

Hint: You will find a reasonable calculation of this as the proof of Lemma 3.2 on page 117 in *Complex Manifolds and Deformation of Complex Structures*, by Kunihiko Kodaira, Springer-Verlag (1986). Even though the line of proof is correct, there are a few typos in the proof and some unexplained stages in the calculation. Your mission is to provide those missing explanations and carry out the calculations fully.

Solution: