

Solutions to Daniel Huybrechts'  
*Complex Geometry: An Introduction*

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ABSTRACT. This document contains solutions to the exercises of Daniel Huybrechts' *Complex Geometry: An Introduction*.

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## CHAPTER 1

# Local Theory

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#### A. Levi-Civita Connection and Holonomy on Complex Manifolds

#### B. Hermite-Einstein and Kähler Einstein Metrics

## CHAPTER 5

# Applications of Cohomology

### 5.1. Hirzebruch-Riemann-Roch Theorem

### 5.2. Kodaira Vanishing Theorem and Applications

### 5.3. Kodaira Embedding Theorem

## CHAPTER 6

# Deformations of Complex Structures

### 6.1. The Maurer-Cartan Equation

### 6.2. General Results