

**RIEMANN SURFACES HOMEWORK 1: DUE  
WEDNESDAY, FEBRUARY 3**

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Problems from Miranda: I.1.A means Chapter I, Section 1, Problem A.

- (1) I.1.A (This exercise shows that compatibility of complex charts is a symmetric relation.)
- (2) Let  $\mathbb{D} = \{z \in \mathbb{C} \mid |z| < 1\}$ . Show that  $\mathbb{C}$  and  $\mathbb{D}$  are homeomorphic, but that no homeomorphism between them can also be holomorphic.  
Hints: Example 1.3, Liouville's theorem.
- (3) I.1.H
- (4) I.2.A
- (5) I.2.E
- (6) I.2.H