

MATH 2250, Fall 2010.

Homework assignment, Oct. 4, 2010

1. Find general form of a conformal mapping from the upper half-plane $\operatorname{Re} z > 0$ to the unit disc \mathbb{D} .
2. Describe all conformal automorphisms of the upper half-plane.
3. Find the image of the disc $|z - 2i| < 2$ under the transformation

$$f(z) = \frac{z - 1}{z + 2}.$$