Math 520 Homework 7

Due Wednesday, May 6, 2020 by 5 pm

Please remember to write down your name on your assignment.
In light of the current campus closure, please submit your homeworks *electronically* by e-mail to our TA and me.

Exercises in Ahlfors: Solve the following problems:

- Chapter 3 section 3.3 (p. 78), problem 3.
- Chapter 3 section 3.4 (p. 80), problem 1. (n.b., Ahlfors sometimes calls fractional linear transformations or Mobius transformations simply "linear transformations"; please do not confuse them with the usual linear maps $az + b$ which are a special case of a fractional linear transformation)
- Chapter 3 section 4.2 (p. 96-97) problem 1, 3.
- Chapter 5 section 5.5 (p. 227) problem 1, 2, 3.

1. Let $\Omega \subset \mathbb{C}$ be a region (not necessarily simply connected!) such that $\mathbb{C}\backslash\Omega$ has at least one unbounded component and at least one bounded component. Prove that Ω is biholomorphic to a subregion of $B_1(0)$.