18.04 Recitation 11
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1.1. Find an LFT from the half-plane $H_\alpha := \{(x,y): y > x\tan(\alpha)\}$ to the unit disc D_1 centered at the origin.

1.2. Find a conformal map from the strip $I_\pi := \{(x,y): 0 < y < \pi\}$ to the upper half-plane H.

1.3. Find a conformal map from the upper semi-disc $R_2 := \{(x,y) \in D_1 : y > 0\}$ to the upper half-plane H.

1.4. Find a conformal map from the "infinite well" $W_\pi := \{(x,y): 0 < y < \pi, x < 0\}$ to the upper half-plane.

2.1 Find the reflection of a point z_1 in the x-axis.

2.2. Define the reflection $r_C(z_2)$ of a point z_2 in a circle C as follows. Let T_{CL} be an LFT mapping the circle C to a line L. Then, $r_C(z_2) := T_{CL}^{-1}(r_L(T_{CL}(z_2)))$, where r_L denotes reflection in the line L. Use this definition to find the reflection of a point z_2 in the unit circle.