

Series 7

Since we just started a new section, this exercise is short and simple!

I. Conformality condition in $d = 2$

1. Check explicitly, that (2.1) is equivalent to (3.2) and (3.3).
2. Verify the equivalence of (3.2), (3.3) to (3.4) or (3.5).
3. Show that in complex coordinates, (3.4) can be written as (3.9).

II. The group $SL(2, \mathbb{C})$

1. Write down the explicit $SL(2, \mathbb{C})$ matrices corresponding to translations, rotations, dilations and SCT.
2. Given three points z_1, z_2, z_3 , find the explicit $SL(2, \mathbb{C})$ transformation that maps them to $0, 1, \infty$, respectively.