

Exercise 7

Use the identity obtained in Exercise 6 to derive the cancellation law

$$\frac{z_1 z}{z_2 z} = \frac{z_1}{z_2} \quad (z_2 \neq 0, z \neq 0).$$

Solution

Use the result of Exercise 6 on the left side.

$$\begin{aligned} \frac{z_1 z}{z_2 z} &= \left(\frac{z_1}{z_2} \right) \left(\frac{z}{z} \right) \\ &= \left(\frac{z_1}{z_2} \right) (1) \\ &= \frac{z_1}{z_2} \end{aligned}$$