

Consider the function

$$z = \frac{a\mathcal{Z} + b}{c\mathcal{Z} + d}$$

where a, b, c and d are complex-valued constants.

Suppose \mathcal{Z} sits on the unit circle

$$|\mathcal{Z}|^2 = 1$$

What is the “shape” of the curve in the z plane that corresponds to this circle in the \mathcal{Z} plane?