

eg] $T: z \mapsto \frac{1}{10} e^{\pi/10 i} z$

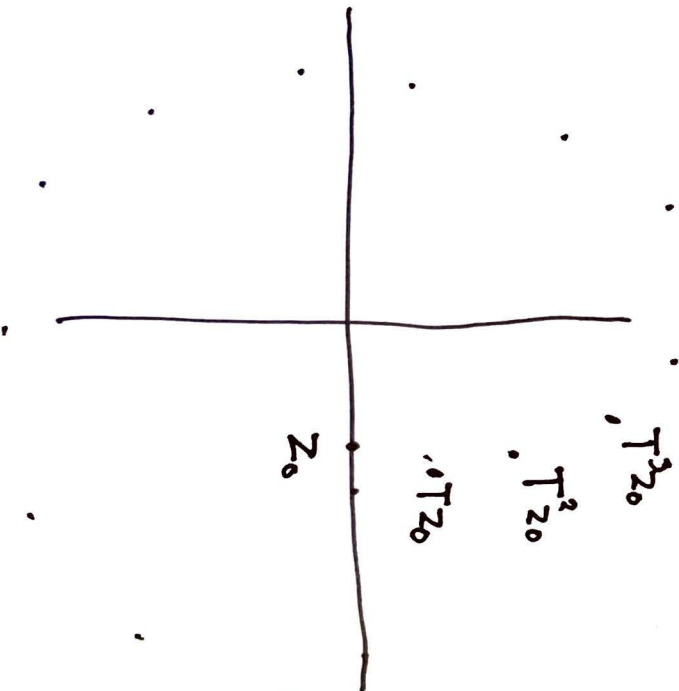
T Scales by $1/10$, rotates by $\pi/10$.

Let $z_0 = 1$. Consider the set

$$\{T^0 z_0, T^1 z_0, T^2 z_0, T^3 z_0, \dots, T^{100} z_0\}$$

where $T^0 z_0 = z_0$ and $T^{k+1} z_0 = T(T^k z_0)$

for $k \geq 0$.



$$\text{Define } R: z \mapsto \frac{z-1}{z+1}$$

$$0 \mapsto \frac{-1}{1} = -1$$

$$1 \mapsto \frac{0}{2} = 0$$

$$\infty \mapsto \frac{z-1}{z+1} = \frac{z(1-\frac{1}{z})}{z(1+\frac{1}{z})} = \frac{1-\frac{1}{z}}{1+\frac{1}{z}} = 1$$

$$w = Rz = \frac{z-1}{z+1} ; \quad R^{-1}w = z$$

$$w = \frac{z-1}{z+1}$$

$$w(z+1) = z-1$$

$$wz + w = z - 1$$

$$1+w = z-wz = z(1-w)$$

$$R^{-1}w = z = \frac{1+w}{1-w}$$

$$R: z \mapsto \frac{z-1}{z+1}, \quad R^{-1}: w \mapsto \frac{1+w}{1-w}$$

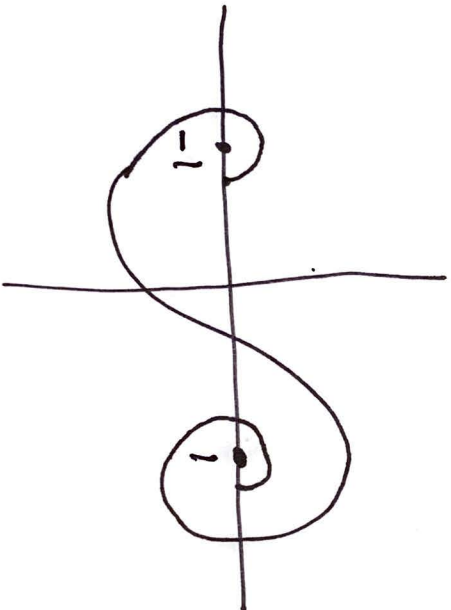
$$0 \mapsto -1$$

$$-1 \mapsto 0$$

$$1 \mapsto 1$$

$$1 \mapsto 8$$

Define $S = RTR^{-1}$



$$\left\{ S^0 z_1, S^1 z_1, S^2 z_1, \dots, S^{100} z_1 \right\}$$

$$\text{where } z_1 = -0.96$$