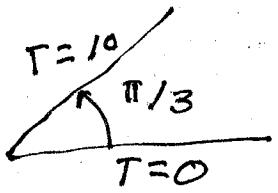
(1) Find a linear fractional transformation that takes $1 \to 0$, $i \to 1$ and $-i \to -1$

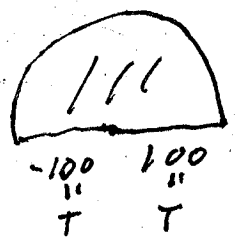
(2) Let A be the wedge $0 \le \text{Arg } z \le \pi/3$

Find the steady temperature distribution if the x-axis is maintained at $T=0$ and the upper edge at $T=10$



(3) Let A be the upper half of the unit disk. Assume $T = +100$ for $x > 0$, $T = -100$ for $x < 0$ and $T = -\frac{200 \text{ Arg } z}{\pi} + 100$ on the top edge. Find the steady T distribution

(4) Let A be the disk of radius 2 ($|z| \le 2$) with $T = 1$ on its top edge and $T = -1$ on its bottom edge. Find the steady T distribution



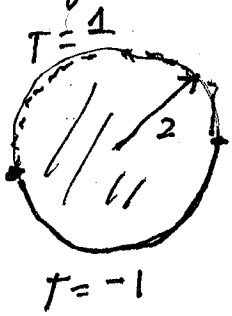


Figure (3)