MCMT Homework 5

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Exercise 5.1

From Exercise 3.1, we know that π is fully supported, i.e., $\pi(x) > 0$ for all x.

To show that $\delta_x P^t$ is not fully supported for any $t \geq 0$ by induction.

Base case: δ_x has only support of 1. So $\delta_x P^0 = \delta_x$ is not fully supported.

Inductive step: assume that for some $t \geq 0$, $delta_x P^t$ is not fully supported.

Want to show that $delta_x P^{t+1}$ is not fully supported either.