Explore the proof of Cantor's Theorem. Here $S = \{\Delta, \square, \bigcirc, \star\}$. Invent your own $\theta : S \to \mathcal{P}(S)$ and use the algorithm from the proof of Cantor's Theorem to construct A which is NOT in the range of Θ.

		indicator function of $\Theta(\,)$					indicator function of A					
	the value of $\Theta(\,)$	Δ	$\square$	$\bigcirc$	$\star$	to find A	Δ	$\square$	$\bigcirc$	$\star$	fold	A
Δ	$\{\quad\}$					1–						
$\square$	$\{\quad\}$					1–						
$\bigcirc$	$\{\quad\}$					1–						
$\star$	$\{\quad\}$					1–						

Thus, $A = \{\quad\}$. Verify $A \notin \operatorname{ran}\Theta$:

$\{\quad\} \neq \{\quad\}$

$\{\quad\} \neq \{\quad\}$

$\{\quad\} \neq \{\quad\}$

$\{\quad\} \neq \{\quad\}$