$$\{1\}^* = \{ \quad \varepsilon, \quad 1, \quad 11, \quad 111, \quad \cdots, \quad \}$$

$$A = \{ \qquad\quad 1, \qquad\quad 111, \quad \cdots, \quad \}$$

$$\mathcal{X}_A = \qquad 0 \quad 1 \quad 0 \quad 1 \quad \cdots,$$