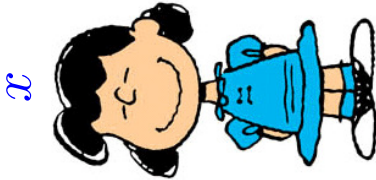


$$(\overline{x}, \overline{w}) \leftarrow \text{Gen}_{\overline{R}}$$



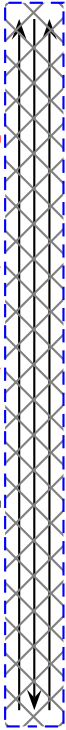
x

$$\boxed{\text{ZKA-POK}_x[(x, w) \in R]}$$

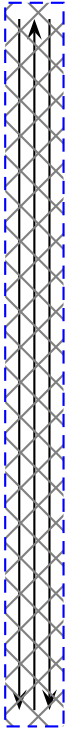
\overline{x}



$$\text{POK}[\exists \overline{w} : (\overline{x}, \overline{w}) \in \overline{R}]$$



$$\text{POK}[\exists w \exists \overline{w} : (x, w) \in R \vee (\overline{x}, \overline{w}) \in \overline{R}]$$



x, w

