

$\mathcal{V}(x,\pi)$

- parse π as $((\alpha_1,...,\alpha_k),(\tau_1,...,\tau_k))$
- derive IP randomness

$$\begin{array}{c} \times, \alpha_{1}, \tau_{1} & f & \rho_{1} \\ \hline \times, (\alpha_{1}, \alpha_{2}), (\tau_{1}, \tau_{2}) & f & \rho_{2} \\ \hline \times, (\alpha_{1}, \alpha_{2}, \alpha_{3}), (\tau_{1}, \tau_{2}, \tau_{3}) & f & \rho_{3} \\ \hline \vdots & \vdots & \vdots & \vdots \\ \hline \times, (\alpha_{1}, \dots, \alpha_{k}), (\tau_{1}, \dots, \tau_{k}) & f & \rho_{k} \end{array}$$

check IP decision

$$\mathbf{V}_{\mathsf{IP}}(\mathbf{x},(\alpha_1,\ldots,\alpha_{\mathsf{k}}),(\boldsymbol{\rho}_1,\ldots,\boldsymbol{\rho}_{\mathsf{k}}))$$