$$\mathcal{G}^{\mathcal{A}}$$

$$\left[\begin{array}{l} (n, p, q) \leftarrow \mathsf{Gen} \\ p_*, q_* \leftarrow \mathcal{A}(n) \\ \mathbf{return} \ [p \stackrel{?}{=} p_*] \vee [p \stackrel{?}{=} q_*] \end{array} \right.$$