

$$\Pr(z < (1-\delta)E(z)) \leq e^{-\delta^2 E(z)}$$

$$\underline{x \in L} \Rightarrow \Pr[\underbrace{\text{out}_V \langle V, P \rangle = 1}] \geq \frac{2}{3}$$

Repeat the protocol  $h$  times

$h$  random variables  $\text{out}_V^i \langle V, P \rangle(x)$   $1 \leq i \leq h$

accept if  $z := \sum_{i=1}^h \text{out}_V^i \langle V, P \rangle(x) \geq \frac{1}{2} h$

$$\underbrace{\Pr[z < \frac{1}{2} h]}_{\text{completeness error}} = \Pr[z < (1 - \frac{1}{4}) \cdot \frac{2}{3} h]$$

$\frac{1}{\delta}$        $\underbrace{\frac{2}{3}}_{E(z)}$

$$\leq e^{-\frac{1}{16} \cdot \frac{2}{3} h} \quad h \rightarrow \text{polynomial in } p(n)$$

$$= \underline{2^{-O(p(n))}}$$