

## Rice's Theorem

if  $L = \{ \langle M \rangle \mid \text{where } M \text{ has property } P \}$

$P$  is non-trivial

$P$  is a property of the language of  $M$

then  $L$  is undecidable.

$$A \leq_p B$$

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LBA

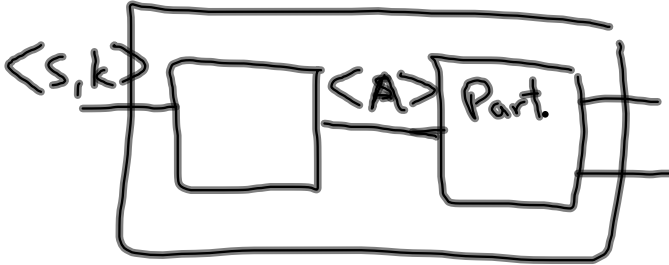
$\epsilon, 1, 00, 01, 10, 11$

$\frac{0}{1}$

# Mapping Reducibility

$$w \xrightarrow{\text{convert}} f(w)$$

# Subset Sum



Suppose  $S$  has a subset  $B$  w/ sum  $k$ .

$$\sum_{b \in B} b = k$$

$$x = \sum_{j \in S} j$$

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$$B \cup \{x\}$$

$$\sum_{i \in S-B} i = \left( \sum_{j \in S} j \right) - k$$

$$x - k$$

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$$(S - B) \cup \{2 \cdot k\}$$

$$A = S \cup \left\{ \cancel{2 \cdot k} \right\} \cup \left\{ \cancel{x} \right\}$$

$x + 2k \qquad 2x$