Mapping Reducibility.

A function \( f : \Sigma^* \rightarrow \Sigma^* \)

is a **computable function**

if some TM \( M \) on every input \( w \) halts w/ just \( f(w) \) on its tape.

Lang. \( A \) is mapping reducible
to lang. \( B \) (written \( A \leq_m B \))

if there is a computable function
\( f : \Sigma^* \rightarrow \Sigma^* \)
where for every
\( w \in A \Leftrightarrow f(w) \in B \).

\( f \) is called the reduction of \( A \)
to \( B \).

\( A \leq_m B \) and \( A \) is undec. then \( B \) is undec.

If \( A \leq_m B \) and \( B \) is recognizable then \( A \) is recognizable.

If \( A \leq_m B \) and \( A \) is not Turing recognizable, then \( B \) is not Turing recognizable.
http://public.gettysburg.edu/~cpresser/cs301/palindrome.jff

0 .. 23

\text{esson}\ i:\ \text{input}\ i\ \text{and}\ 23-i

\text{input} \text{ of length } i \text{ and } 23-i

\text{how many Times did you hit next.}