Announcements:
- quiz this week! you'll get an email and it will be announced on Piazza -- make sure you complete it by Friday
- pass-the-baton is back (modified)

**Def:** A function $f : \Sigma^* \to \Sigma^*$ is **computable** iff there is some Turing machine $M$ which on every input $w$ eventually halts with just $f(w)$ on the tape.

**Def:** For two languages $A$ and $B$, we will say that $A$ is **mapping-reducible** to $B$ if there is a computable function $f$ such that $\forall w, w \in A \iff f(w) \in B$.

We write: $A \leq_m B$
We say: "$f$ is the reduction from $A$ to $B$"
We think: If we can solve $B$, then we can solve $A$:

We showed:

$$f(<M,w>) = <N_1>$$
We showed:

\[ \text{HALT}_M \leq_m \text{Con_{Free}_M} \]

\[ \langle M, w \rangle \xrightarrow{f} \langle N_2 \rangle \]

The \( S \) we built

\[ f(\langle M, w \rangle) = \langle N_2 \rangle \]