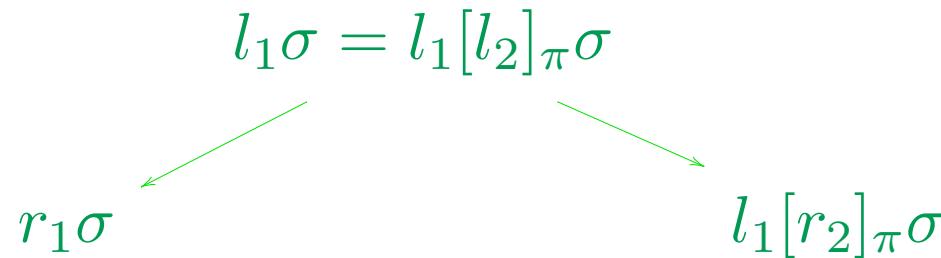


Critical Pairs:

- If $l_1 \rightarrow r_1, l_2 \rightarrow r_2 \in \mathcal{R}$ (variable-renamed),
 $\pi \in Occ(l_1)$ with $l_1|_\pi \notin \mathcal{V}$ and $\sigma = \text{mgu}(l_1|_\pi, l_2)$,
then $\langle r_1\sigma, l_1[r_2]_\pi\sigma \rangle$ is a *critical pair* of \mathcal{R} .
- $l_1 \rightarrow r_1, l_2 \rightarrow r_2$ may be equal up to variable renaming.
Then we only regard $\pi \neq \epsilon$.
- $CP(\mathcal{R}) =$ set of critical pairs of \mathcal{R} .

$$l_1\sigma = l_1[l_2]_\pi\sigma$$


The diagram consists of three parts: a top equation $l_1\sigma = l_1[l_2]_\pi\sigma$ in green, and two arrows originating from the terms $r_1\sigma$ and $l_1[r_2]_\pi\sigma$ in green, which point towards the equation.

Critical Pair Lemma

\mathcal{R} is locally confluent iff all its critical pairs are joinable.