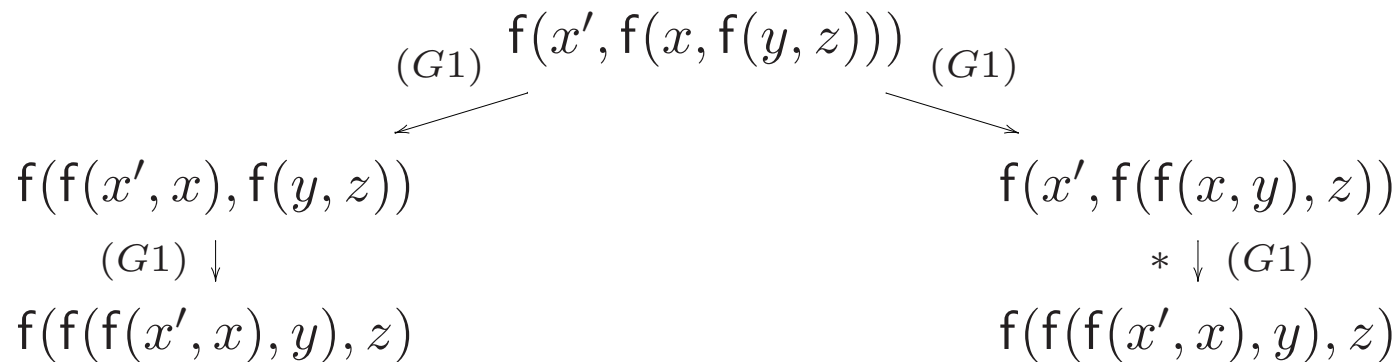
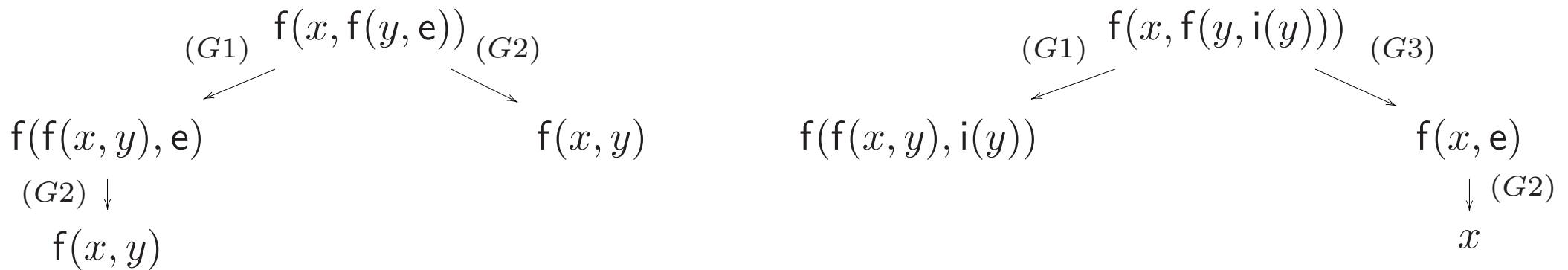


$$\begin{aligned} f(x, f(y, z)) &\rightarrow f(f(x, y), z) && (G1) \\ f(x, e) &\rightarrow x && (G2) \\ f(x, i(x)) &\rightarrow e && (G3) \end{aligned}$$

Critical Pairs:



Algorithm CONFLUENCE(\mathcal{R})

Input: A terminating TRS \mathcal{R} .

Output: “*True*”, if \mathcal{R} is confluent and “*False*”, otherwise

1. Compute all critical pairs $CP(\mathcal{R})$ of \mathcal{R} .
2. If $CP(\mathcal{R}) = \emptyset$, then return “*True*” and stop.
3. Choose $\langle s, t \rangle \in CP(\mathcal{R})$.
4. Reduce s and t as long as possible.
In this way, one obtains the normal forms s' and t' .
5. If $s' \neq t'$ then return “*False*” and stop.
6. Let $CP(\mathcal{R}) = CP(\mathcal{R}) \setminus \{\langle s, t \rangle\}$.
7. Go back to Step 2.