

TRS \mathcal{R} :

$$\begin{aligned} \text{plus}(\mathcal{O}, y) &\rightarrow y \\ \text{plus}(\text{succ}(x), y) &\rightarrow \text{succ}(\text{plus}(x, y)) \end{aligned}$$

- \mathcal{R} is *equivalent* to \mathcal{E} : $\leftrightarrow_{\mathcal{R}}^* = \leftrightarrow_{\mathcal{E}}^*$
- \mathcal{R} is *sound* for \mathcal{E} : $l \leftrightarrow_{\mathcal{E}}^* r$ for all rules $l \rightarrow r \in \mathcal{R}$
- \mathcal{R} is *adequate* for \mathcal{E} : $s \leftrightarrow_{\mathcal{R}}^* t$ for all equations $s \equiv t \in \mathcal{E}$

Thm. 3.3.4

\mathcal{R} is equivalent to \mathcal{E} iff \mathcal{R} is sound and adequate for \mathcal{E}