Abstract Transitions marked with \star have one or more variables which need to be grounded in the head of the transition after having ground the body.

1 Υ

```
0.55: \mathtt{emacs}(\mathtt{F}, \mathtt{U}) \xleftarrow{\emptyset} \mathtt{start} 0.45: \mathtt{ls}(\mathtt{U}) \xleftarrow{\emptyset} \mathtt{start}
```

$\mathbf{2} \quad \Delta$

$2.1 \quad \text{emacs}(F, U)$

```
\begin{array}{l} 0.7: \texttt{ls}(\texttt{U}') \xleftarrow{\texttt{emacs}(\texttt{F})} \texttt{emacs}(\texttt{F}, \texttt{U}) \\ 0.3: \texttt{emacs}(\texttt{F}', \texttt{U}) \xleftarrow{\texttt{emacs}(\texttt{F})} \texttt{emacs}(\texttt{F}, \texttt{U}) \star \end{array}
```

$2.2 \quad emacs(F, tex)$

```
\begin{array}{l} 0.6: \texttt{latex}(\texttt{F, tex}) \xleftarrow{\texttt{emacs}(\texttt{F})} \texttt{emacs}(\texttt{F, tex}) \\ 0.3: \texttt{ls}(\texttt{U}') \xleftarrow{\texttt{emacs}(\texttt{F})} \texttt{emacs}(\texttt{F, tex}) \star \\ 0.1: \texttt{emacs}(\texttt{F}', \texttt{U}) \xleftarrow{\texttt{emacs}(\texttt{F})} \texttt{emacs}(\texttt{F, tex}) \star \end{array}
```

2.3 ls(U)

```
\begin{array}{l} 0.4: \texttt{ls(U)} \xleftarrow{\texttt{ls}} \texttt{ls(U)} \\ 0.6: \texttt{emacs(F, U')} \xleftarrow{\texttt{ls}} \texttt{ls(U)} \star \end{array}
```

2.4 latex(F, U)

```
\begin{array}{l} 0.2: \texttt{ls}(\texttt{U}') \xleftarrow{\texttt{latex}(\texttt{F})} \texttt{latex}(\texttt{F}, \texttt{tex}) \; \star \\ 0.2: \texttt{emacs}(\texttt{F}, \texttt{tex}) \xleftarrow{\texttt{latex}(\texttt{F})} \texttt{latex}(\texttt{F}, \texttt{tex}) \\ 0.6: \texttt{emacs}(\texttt{F}', \texttt{U}) \xleftarrow{\texttt{latex}(\texttt{F})} \texttt{latex}(\texttt{F}, \texttt{tex}) \; \star \end{array}
```