Tranlation of HOL Terms to Sets

- Term constant c translates to term $|\mathsf{c}|$
  - e.g. $|\mathsf{F}| \;=\; |0| \;=\; \varnothing$
- Term t recursively translates to term $[\![t]\!]$

$$
\begin{array}{lcl}
[\![x:\sigma]\!] & = & x:V \\
[\![\mathsf{c}:\sigma[\sigma_1,\ldots,\sigma_n]\,]\!] & = & |\mathsf{c}|\ [\![\sigma_1]\!]\ \ldots\ [\![\sigma_n]\!] \\
[\![\lambda\,x:\sigma.\ t]\!] & = & \boldsymbol{\lambda} x \in [\![\sigma]\!].\ [\![t]\!] \\
[\![t_1\ \ t_2]\!] & = & [\![t_1]\!] \diamond [\![t_2]\!]
\end{array}
$$

- Examples:

$$
\begin{array}{lcl}
[\![\lambda\,x:\alpha.\ x]\!] & = & \boldsymbol{\lambda} x \in \alpha.\ x \\
[\![(\lambda\,x.\ x)\ 1]\!] & = & (\boldsymbol{\lambda} x \in |num|.\ x) \diamond |1|
\end{array}
$$