91 (drink) There are some people in a bar. Formalize and prove the statement “There's a person in the bar such that, if that person drinks, then everyone in the bar drinks.”.

After trying the question, scroll down to the solution.

§ Let *people* be the people in the bar, and let *drinks* be a predicate over *people* .

$$
\begin{array}{lll}
 & \exists p\colon people\cdot\ (drinks\ p) \Rightarrow (\forall q\colon people\cdot\ (drinks\ q)) & \text{antidistributive law} \\
= & (\forall p\colon people\cdot\ (drinks\ p)) \Rightarrow (\forall q\colon people\cdot\ (drinks\ q)) & \text{rename, and reflexive law} \\
= & \top &
\end{array}
$$