# t209_member_1 <br> (TMTnnZL91HrfNcjNeVtxF4h42k5TKL6W2pY) 

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Let $v 1 \_$membered : $\iota \Rightarrow 0$ be given. Let $v 1 \_x c m p l x \_0: \iota \Rightarrow 0$ be given. Let $k 23 \_m e m b e r \_1: \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let k11_member_1 : $\iota \Rightarrow \iota \Rightarrow \iota$ be given. Let k13_member_1 : $\iota \Rightarrow \iota \Rightarrow \iota$ be given. Let k5_member_1 : $\iota \Rightarrow \iota$ be given. Let $k 9 \_m e m b e r \_1: \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k 1_{-}$tarski : $\iota \Rightarrow \iota$ be given. Assume the following.

$$
\begin{gather*}
\forall X 0 .\left(v 1 \_m e m b e r e d ~ X 0\right) \Rightarrow\left(\forall X 1 .\left(v 1 \_m e m b e r e d X 1\right) \Rightarrow\left(k 13 \_m e m b e r \_1\right.\right. \\
\left.\left.X 0\left(k 5 \_m e m b e r \_1 X 1\right)=k 5 \_m e m b e r \_1\left(k 13 \_m e m b e r \_1 X 0 X 1\right)\right)\right) \tag{1}
\end{gather*}
$$

Assume the following.

$$
\forall X 0 .\left(v 1 \_m e m b e r e d ~ X 0\right) \Rightarrow\left(\forall X 1 .\left(v 1 \_m e m b e r e d ~ X 1\right) \Rightarrow(\forall X 2 \text {. }\right.
$$

$$
\begin{equation*}
\left(v 1 \_x c m p l x \_0 X 2\right) \Rightarrow\left(k 23 \_m e m b e r \_1\left(k 9 \_m e m b e r \_1 X 0 X 1\right) X 2=k 9 \_m e m b e r \_1\right. \tag{2}
\end{equation*}
$$ (k23_member_1 X0 X2) (k23_member_1 X1 X2))))

Assume the following.

$$
\begin{gather*}
\forall X 0 . \forall X 1 .\left(\left(v 1 \_m e m b e r e d \quad X 0\right) \wedge\left(v 1 \_x c m p l x \_0 X 1\right)\right) \Rightarrow(  \tag{3}\\
\left.v 1 \_ \text {membered }\left(k 23 \_m e m b e r \_1 X 0 X 1\right)\right)
\end{gather*}
$$

Assume the following.

$$
\begin{equation*}
\forall X 0 .\left(v 1 \_x c m p l x \_0 \quad X 0\right) \Rightarrow\left(v 1 \_m e m b e r e d \quad\left(k 1 \_t a r s k i X 0\right)\right) \tag{4}
\end{equation*}
$$

Assume the following.

$$
\begin{equation*}
\forall X 0 .\left(v 1 \_m e m b e r e d \quad X 0\right) \Rightarrow\left(v 1 \_m e m b e r e d\left(k 5 \_m e m b e r \_1 X 0\right)\right) \tag{5}
\end{equation*}
$$

Assume the following.

$$
\begin{gather*}
\forall X 0 .\left(v 1 \_m e m b e r e d ~ X 0\right) \Rightarrow\left(\forall X 1 .\left(v 1 \_m e m b e r e d ~ X 1\right) \Rightarrow\left(k 11 \_m e m b e r \_1\right.\right. \\
\left.\left.X 0 X 1=k 9 \_m e m b e r \_1 X 0\left(k 5 \_m e m b e r \_1 X 1\right)\right)\right) \tag{6}
\end{gather*}
$$

Assume the following.

$$
\begin{gather*}
\forall X 0 .\left(v 1 \_m e m b e r e d ~ X 0\right) \Rightarrow\left(\forall X 1 .\left(v 1 \_x c m p l x \_0 X 1\right) \Rightarrow\left(k 23 \_m e m b e r \_1\right.\right. \\
\left.\left.X 0 X 1=k 13 \_m e m b e r \_1\left(k 1 \_t a r s k i X 1\right) X 0\right)\right) \tag{7}
\end{gather*}
$$

## Theorem 1

$\forall X 0 .\left(v 1 \_m e m b e r e d \quad X 0\right) \Rightarrow\left(\forall X 1 .\left(v 1 \_m e m b e r e d ~ X 1\right) \Rightarrow(\forall X 2\right.$.
( $\left.v 1 \_x c m p l x \_0 X 2\right) \Rightarrow\left(k 23 \_m e m b e r \_1\left(k 11 \_m e m b e r \_1 X 0 X 1\right) X 2=k 11 \_m e m b e r \_1\right.$
(k23_member_1 X0 X2) (k23_member_1 X1 X2))))

