

## l2\_limfunc2

(TMPQiA2rCZY2kZ3F2L7oTfgxB7FjDjAgHTB)

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Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k20\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((r1\_tarski X0 X1) \wedge \\ & (r1\_tarski X2 X3)) \Rightarrow (r1\_tarski (k3\_xboole\_0 X0 X2) (k3\_xboole\_0 \\ & X1 X3)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((r1\_tarski X0 X1) \wedge (r1\_tarski \\ & X1 X2)) \Rightarrow (r1\_tarski X0 X2) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. r1\_tarski (k3\_xboole\_0 X0 X1) X0 \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & X0)) \Rightarrow (k9\_subset\_1 X0 X1 X2 = k3\_xboole\_0 X1 X2) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k1\_numbers) \wedge \\
& (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
& (\forall X1.((v1\_funct\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& k1\_numbers k1\_numbers)))))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge (m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))))) \Rightarrow ((r1\_tarski \\
& (k2\_relset\_1 k1\_numbers X0) (k1\_relset\_1 k1\_numbers (k20\_valued\_1 \\
& k1\_numbers k1\_numbers k1\_numbers X1 X2))) \Rightarrow ((k1\_relset\_1 k1\_numbers \\
& (k20\_valued\_1 k1\_numbers k1\_numbers k1\_numbers X1 X2) = k9\_subset\_1 \\
& k1\_numbers (k1\_relset\_1 k1\_numbers X1) (k1\_relset\_1 k1\_numbers \\
& X2)) \wedge ((r1\_tarski (k2\_relset\_1 k1\_numbers X0) (k1\_relset\_1 k1\_numbers \\
& X1)) \wedge (r1\_tarski (k2\_relset\_1 k1\_numbers X0) (k1\_relset\_1 k1\_numbers \\
& X2))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (X2 = k3\_xboole\_0 X0 X1) \Leftrightarrow (\forall X3. \\
& (X3 \in X2) \Leftrightarrow ((X3 \in X0) \wedge (X3 \in X1)))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0. \forall X1. k3\_xboole\_0 X0 X1 = k3\_xboole\_0 X1 X0 \tag{7}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k1\_numbers) \wedge \\
& (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
& (\forall X1.((v1\_funct\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& k1\_numbers k1\_numbers)))))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge (m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))))) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (k1\_zfmisc\_1 k1\_numbers)) \Rightarrow ((r1\_tarski (k2\_relset\_1 \\
& k1\_numbers X0) (k9\_subset\_1 k1\_numbers (k1\_relset\_1 k1\_numbers \\
& (k20\_valued\_1 k1\_numbers k1\_numbers k1\_numbers X1 X2)) X3)) \Rightarrow ( \\
& (r1\_tarski (k2\_relset\_1 k1\_numbers X0) (k1\_relset\_1 k1\_numbers \\
& (k20\_valued\_1 k1\_numbers k1\_numbers k1\_numbers X1 X2))) \wedge ((r1\_tarski \\
& (k2\_relset\_1 k1\_numbers X0) X3) \wedge ((k1\_relset\_1 k1\_numbers (k20\_valued\_1 \\
& k1\_numbers k1\_numbers k1\_numbers X1 X2) = k9\_subset\_1 k1\_numbers \\
& (k1\_relset\_1 k1\_numbers X1) (k1\_relset\_1 k1\_numbers X2)) \wedge ((r1\_tarski \\
& (k2\_relset\_1 k1\_numbers X0) (k1\_relset\_1 k1\_numbers X1)) \wedge ((r1\_tarski \\
& (k2\_relset\_1 k1\_numbers X0) (k1\_relset\_1 k1\_numbers X2)) \wedge ((r1\_tarski \\
& (k2\_relset\_1 k1\_numbers X0) (k9\_subset\_1 k1\_numbers (k1\_relset\_1 \\
& k1\_numbers X1) X3)) \wedge (r1\_tarski (k2\_relset\_1 k1\_numbers X0) (k9\_subset\_1 \\
& k1\_numbers (k1\_relset\_1 k1\_numbers X2) X3)))))))))
\end{aligned}$$