

## l2\_limfunc3

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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  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  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. Let  $k4\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $k18\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_membered : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (r1\_tarski X0 X1) \Rightarrow (r1\_tarski (k4\_xboole\_0 X0 X2) (k4\_xboole\_0 X1 X2)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1\_tarski X0 X1) \wedge (r1\_tarski X1 X2)) \Rightarrow (r1\_tarski X0 X2) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. r1\_tarski (k3\_xboole\_0 X0 X1) X0 \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. k6\_subset\_1 X0 X1 = k4\_xboole\_0 X0 X1 \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3\_membered \\ & X1)\wedge((v3\_membered X2)\wedge(((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))))\wedge((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X2))))))\Rightarrow(k20\_valued\_1 X0 X1 X2 X3 X4 = k18\_valued\_1 \\ & X3 X4) \end{aligned} \tag{6}$$

Assume the following.

$$v3\_membered k1\_numbers \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.m1\_subset\_1 (k6\_subset\_1 X0 X1) (k1\_zfmisc\_1 X0) \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_valued\_0 \\ & X0)))\wedge((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_valued\_0 X1))))\Rightarrow \\ & ((v1\_relat\_1 (k18\_valued\_1 X0 X1))\wedge(v1\_funct\_1 (k18\_valued\_1 \\ & X0 X1))) \end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_valued\_0 X0)))\Rightarrow \\ & (\forall X1.((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_valued\_0 \\ & X1)))\Rightarrow(\forall X2.((v1\_relat\_1 X2)\wedge(v1\_funct\_1 X2))\Rightarrow((X2 = k18\_valued\_1 \\ & X0 X1)\Leftrightarrow((k9\_xtuple\_0 X2 = k3\_xboole\_0 (k9\_xtuple\_0 X0) (k9\_xtuple\_0 \\ & X1))\wedge(\forall X3.(X3 \in k9\_xtuple\_0 X2)\Rightarrow(k1\_funct\_1 X2 X3 = k3\_xcmplx\_0 \\ & (k1\_funct\_1 X0 X3) (k1\_funct\_1 X1 X3)))))) \end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3\_membered \\ & X1)\wedge((v3\_membered X2)\wedge(((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))))\wedge((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X2))))))\Rightarrow(k20\_valued\_1 X0 X1 X2 X3 X4 = k20\_valued\_1 \\ & X0 X1 X2 X4 X3) \end{aligned} \tag{11}$$

Assume the following.

$$\forall X0.(v3\_membered X0)\Rightarrow(v1\_membered X0) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v1\_relat\_1 X2) \tag{13}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v1\_membered\ X1) \Rightarrow (\forall X2. (m1\_subset\_1 \\ & X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))) \Rightarrow (v1\_valued\_0\ X2)) \end{aligned} \quad (14)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((v1\_funct\_1\ X0) \wedge ((v1\_funct\_2\ X0\ k5\_numbers\ k1\_numbers) \wedge \\ & (m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers)))) \Rightarrow \\ & (\forall X1. ((v1\_funct\_1\ X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1 \\ & k1\_numbers\ k1\_numbers)))) \Rightarrow (\forall X2. ((v1\_funct\_1\ X2) \wedge (m1\_subset\_1 \\ & X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers)))) \Rightarrow (\forall X3. \\ & (r1\_tarski\ (k10\_xtuple\_0\ X0)\ (k6\_subset\_1\ (k9\_xtuple\_0\ (k20\_valued\_1 \\ k1\_numbers\ k1\_numbers\ k1\_numbers\ X1\ X2))\ X3)) \Rightarrow ((r1\_tarski\ (k10\_xtuple\_0 \\ & X0)\ (k9\_xtuple\_0\ (k20\_valued\_1\ k1\_numbers\ k1\_numbers\ k1\_numbers \\ & X1\ X2))) \wedge ((k9\_xtuple\_0\ (k20\_valued\_1\ k1\_numbers\ k1\_numbers\ k1\_numbers \\ & X1\ X2) = k3\_xboole\_0\ (k9\_xtuple\_0\ X1)\ (k9\_xtuple\_0\ X2)) \wedge ((r1\_tarski \\ & (k10\_xtuple\_0\ X0)\ (k9\_xtuple\_0\ X1)) \wedge ((r1\_tarski\ (k10\_xtuple\_0 \\ & X0)\ (k9\_xtuple\_0\ X2)) \wedge ((r1\_tarski\ (k10\_xtuple\_0\ X0)\ (k6\_subset\_1 \\ & (k9\_xtuple\_0\ X1)\ X3)) \wedge (r1\_tarski\ (k10\_xtuple\_0\ X0)\ (k6\_subset\_1 \\ & (k9\_xtuple\_0\ X2)\ X3)))))))))) \end{aligned}$$