

## t5\_limfunc3

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  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  $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_rcomp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. r1\_tarski X0 (k2\_xboole\_0 X0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & X1 k1\_numbers) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 \\ & (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow ((r1\_tarski \\ & (k2\_rcomp\_1 X1 (k7\_real\_1 X1 X0)) (k1\_relset\_1 k1\_numbers X2)) \Rightarrow \\ & ((r1\_xxreal\_0 X0 k6\_numbers) \vee (\forall X3. (m1\_subset\_1 X3 k1\_numbers) \Rightarrow \\ & (\neg(\neg r1\_xxreal\_0 X3 X1) \wedge (\forall X4. (m1\_subset\_1 X4 k1\_numbers) \Rightarrow \\ & (\neg(\neg r1\_xxreal\_0 X3 X4) \wedge ((\neg r1\_xxreal\_0 X4 X1) \wedge (X4 \in k1\_relset\_1 \\ & k1\_numbers X2)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & X1 k1\_numbers) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 \\ & (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow ((r1\_tarski \\ & (k2\_rcomp\_1 (k9\_real\_1 X1 X0) X1) (k1\_relset\_1 k1\_numbers X2)) \Rightarrow \\ & ((r1\_xxreal\_0 X0 k6\_numbers) \vee (\forall X3. (m1\_subset\_1 X3 k1\_numbers) \Rightarrow \\ & (\neg(\neg r1\_xxreal\_0 X1 X3) \wedge (\forall X4. (m1\_subset\_1 X4 k1\_numbers) \Rightarrow \\ & (\neg(\neg r1\_xxreal\_0 X4 X3) \wedge ((\neg r1\_xxreal\_0 X1 X4) \wedge (X4 \in k1\_relset\_1 \\ & k1\_numbers X2)))))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1\_tarSKI X0 X1)\wedge(r1\_tarSKI X1 X2))\Rightarrow(r1\_tarSKI X0 X2) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers)\wedge(v1\_xreal\_0 X1))\Rightarrow(k9\_real\_1 X0 X1 = k6\_xcmplx\_0 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers)\wedge(v1\_xreal\_0 X1))\Rightarrow(k7\_real\_1 X0 X1 = k2\_xcmplx\_0 X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)))\Rightarrow(k4\_subset\_1 X0 X1 X2 = k2\_xboole\_0 X1 X2) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge(v4\_relat\_1 X1 X0))\Rightarrow(k1\_relset\_1 X0 X1 = k9\_xtuple\_0 X1) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0)\wedge(v1\_xreal\_0 X1))\Rightarrow(v1\_xreal\_0 (k6\_xcmplx\_0 X0 X1)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0)\wedge(v1\_xreal\_0 X1))\Rightarrow(v1\_xreal\_0 (k2\_xcmplx\_0 X0 X1)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0)\wedge(v1\_xxreal\_0 X1))\Rightarrow(m1\_subset\_1 (k2\_rcomp\_1 X0 X1) (k1\_zfmisc\_1 k1\_numbers)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0 X0 X1 = k2\_xboole\_0 X1 X0 \quad (12)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(v1\_xxreal\_0 X0) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow((v4\_relat\_1 X2 X0)\wedge(v5\_relat\_1 X2 X1)) \quad (14)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xreal\_0 X0) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \quad (16)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 k1\_numbers) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 \\ & (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow ((r1\_tarski \\ & (k4\_subset\_1 k1\_numbers (k2\_rcomp\_1 (k9\_real\_1 X1 X0) X1) (k2\_rcomp\_1 \\ & X1 (k7\_real\_1 X1 X0))) (k9\_xtuple\_0 X2)) \Rightarrow ((r1\_xxreal\_0 X0 k6\_numbers) \vee \\ & (\forall X3.(m1\_subset\_1 X3 k1\_numbers) \Rightarrow (\forall X4.(m1\_subset\_1 \\ & X4 k1\_numbers) \Rightarrow (\neg(\neg r1\_xxreal\_0 X1 X3) \wedge ((\neg r1\_xxreal\_0 X4 X1) \wedge \\ & (\forall X5.(m1\_subset\_1 X5 k1\_numbers) \Rightarrow (\forall X6.(m1\_subset\_1 \\ & X6 k1\_numbers) \Rightarrow (\neg(\neg r1\_xxreal\_0 X5 X3) \wedge ((\neg r1\_xxreal\_0 X1 X5) \wedge \\ & ((X5 \in k9\_xtuple\_0 X2) \wedge ((\neg r1\_xxreal\_0 X4 X6) \wedge ((\neg r1\_xxreal\_0 X6 \\ & X1) \wedge (X6 \in k9\_xtuple\_0 X2))))))))))))))))) \end{aligned}$$