

t77_lpspace2 (TM- RaQ8WdniCK7aHccQDYZX9cHSmZMmU4SGJ)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_prob_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_prob_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_numbers : \iota$ be given. Let $v10_valued_0 : \iota \Rightarrow o$ be given. Let $v6_supinf_2 : \iota \Rightarrow o$ be given. Let $v4_measure1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k20_lpspace1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_lpspace2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $r1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k18_lpspace1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $k10_lpspace2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_lpspace1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_lpspace2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_xreal_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $g1_normsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_algstr_0 : \iota \Rightarrow \iota$ be given. Let $u1_rlvect_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((\neg v1_xboole_0 X1) \wedge \\
& ((v1_prob_1 X1 X0) \wedge ((v4_prob_1 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k1_zfmisc_1 X0)))))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 X1 k7_numbers) \wedge ((v10_valued_0 X2) \wedge ((v6_supinf_2 X2) \wedge ((v4_measure1 \\
& X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 k7_numbers)))))) \Rightarrow \\
& (r1_funct_2 (u1_struct_0 (k18_lpspace1 X0 X1 X2)) k1_numbers (\\
& u1_struct_0 (k10_lpspace2 X0 X1 X2 np_1)) k1_numbers (k19_lpspace1 \\
& X0 X1 X2) (k11_lpspace2 X0 X1 X2 np_1))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((\neg v1_xboole_0 X1) \wedge \\
& ((v1_prob_1 X1 X0) \wedge ((v4_prob_1 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k1_zfmisc_1 X0)))))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 X1 k7_numbers) \wedge ((v10_valued_0 X2) \wedge ((v6_supinf_2 X2) \wedge ((v4_measure1 \\
& X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 k7_numbers)))))) \Rightarrow \\
& (k18_lpspace1 X0 X1 X2 = k10_lpspace2 X0 X1 X2 np_1)))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & ((v2_xreal_0 \ np_1) \wedge (m2_subset_1 \ np_1 \ k1_numbers \ k5_numbers)) \wedge \\ & ((m1_subset_1 \ np_1 \ k5_numbers) \wedge (m1_subset_1 \ np_1 \ k1_numbers)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & ((\neg v1_xboole_0 \ X1) \wedge (\neg v1_xboole_0 \ X3) \wedge (((v1_funct_1 \ X4) \wedge ((\\ & v1_funct_2 \ X4 \ X0 \ X1) \wedge (m1_subset_1 \ X4 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\ & X0 \ X1)))))) \wedge ((v1_funct_1 \ X5) \wedge ((v1_funct_2 \ X5 \ X2 \ X3) \wedge (m1_subset_1 \\ & X5 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X2 \ X3)))))) \Rightarrow ((r1_funct_2 \ X0 \ X1 \\ & X2 \ X3 \ X4 \ X5) \Leftrightarrow (X4 = X5)) \end{aligned} \quad (4)$$

Assume the following.

$$\neg v1_xboole_0 \ k1_numbers \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 \ X0) \wedge (((\neg v1_xboole_0 \\ & X1) \wedge ((v1_prob_1 \ X1 \ X0) \wedge ((v4_prob_1 \ X1 \ X0) \wedge (m1_subset_1 \ X1 \ (k1_zfmisc_1 \\ & (k1_zfmisc_1 \ X0)))))) \wedge ((v1_funct_1 \ X2) \wedge ((v1_funct_2 \ X2 \ X1 \ k7_numbers) \wedge \\ & ((v10_valued_0 \ X2) \wedge ((v6_supinf_2 \ X2) \wedge ((v4_measure1 \ X2 \ X0 \ X1) \wedge \\ & (m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X1 \ k7_numbers)))))))))) \Rightarrow \\ & ((v1_funct_1 \ (k19_lpspace1 \ X0 \ X1 \ X2)) \wedge ((v1_funct_2 \ (k19_lpspace1 \\ & X0 \ X1 \ X2) \ (u1_struct_0 \ (k18_lpspace1 \ X0 \ X1 \ X2)) \ k1_numbers) \wedge (m1_subset_1 \\ & (k19_lpspace1 \ X0 \ X1 \ X2) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (u1_struct_0 \\ & (k18_lpspace1 \ X0 \ X1 \ X2)) \ k1_numbers)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 \ X0) \wedge \\ & (((\neg v1_xboole_0 \ X1) \wedge ((v1_prob_1 \ X1 \ X0) \wedge ((v4_prob_1 \ X1 \ X0) \wedge (m1_subset_1 \\ & X1 \ (k1_zfmisc_1 \ (k1_zfmisc_1 \ X0)))))) \wedge (((v1_funct_1 \ X2) \wedge ((v1_funct_2 \\ & X2 \ X1 \ k7_numbers) \wedge ((v10_valued_0 \ X2) \wedge ((v6_supinf_2 \ X2) \wedge ((v4_measure1 \\ & X2 \ X0 \ X1) \wedge (m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X1 \ k7_numbers)))))))))) \wedge \\ & ((v2_xreal_0 \ X3) \wedge (m1_subset_1 \ X3 \ k1_numbers)))) \Rightarrow ((v1_funct_1 \\ & (k11_lpspace2 \ X0 \ X1 \ X2 \ X3)) \wedge ((v1_funct_2 \ (k11_lpspace2 \ X0 \ X1 \ X2 \\ & X3) \ (u1_struct_0 \ (k10_lpspace2 \ X0 \ X1 \ X2 \ X3)) \ k1_numbers) \wedge (m1_subset_1 \\ & (k11_lpspace2 \ X0 \ X1 \ X2 \ X3) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (u1_struct_0 \\ & (k10_lpspace2 \ X0 \ X1 \ X2 \ X3)) \ k1_numbers)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge \\
& ((v1_prob_1 X1 X0) \wedge ((v4_prob_1 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k1_zfmisc_1 X0)))))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 X1 k7_numbers) \wedge ((v10_valued_0 X2) \wedge ((v6_supinf_2 X2) \wedge ((v4_measure1 \\
& X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 k7_numbers)))))) \Rightarrow \\
& (k20_lpspace1 X0 X1 X2 = g1_normsp_1 (u1_struct_0 (k18_lpspace1 \\
& X0 X1 X2)) (u2_struct_0 (k18_lpspace1 X0 X1 X2)) (u1_algstr_0 (k18_lpspace1 \\
& X0 X1 X2)) (u1_rlvect_1 (k18_lpspace1 X0 X1 X2)) (k19_lpspace1 X0 \\
& X1 X2))))))
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge \\
& ((v1_prob_1 X1 X0) \wedge ((v4_prob_1 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k1_zfmisc_1 X0)))))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 X1 k7_numbers) \wedge ((v10_valued_0 X2) \wedge ((v6_supinf_2 X2) \wedge ((v4_measure1 \\
& X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 k7_numbers)))))) \Rightarrow \\
& (\forall X3.((v2_xreal_0 X3) \wedge (m1_subset_1 X3 k1_numbers)) \Rightarrow \\
& (k12_lpspace2 X0 X1 X2 X3 = g1_normsp_1 (u1_struct_0 (k10_lpspace2 \\
& X0 X1 X2 X3)) (u2_struct_0 (k10_lpspace2 X0 X1 X2 X3)) (u1_algstr_0 \\
& (k10_lpspace2 X0 X1 X2 X3)) (u1_rlvect_1 (k10_lpspace2 X0 X1 X2 X3)) \\
& (k11_lpspace2 X0 X1 X2 X3))))))
\end{aligned} \tag{9}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge \\
& ((v1_prob_1 X1 X0) \wedge ((v4_prob_1 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k1_zfmisc_1 X0)))))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 X1 k7_numbers) \wedge ((v10_valued_0 X2) \wedge ((v6_supinf_2 X2) \wedge ((v4_measure1 \\
& X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 k7_numbers)))))) \Rightarrow \\
& (k20_lpspace1 X0 X1 X2 = k12_lpspace2 X0 X1 X2 np_1)))
\end{aligned}$$