

t55_lpspace2

(TMd3Pyit2rd3oZvEQeR3FZvZnbZytNi32qF)

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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 $k1_numbers : \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k12_lpspace2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_lpspace2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k1_mesfunc6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_mesfun6c : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k56_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_normsp_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_power : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k1_lpspace2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((\neg v1_xboole_0 X1) \wedge \\
& ((v1_prob_1 X1 X0) \wedge ((v4_prob_1 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k1_zfmisc_1 X0)))))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 X1 k7_numbers) \wedge ((v10_valued_0 X2) \wedge ((v6_supinf_2 X2) \wedge ((v4_measure1 \\
& X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 k7_numbers)))))) \Rightarrow \\
& (\forall X3. ((v2_xxreal_0 X3) \wedge (m1_subset_1 X3 k1_numbers)) \Rightarrow \\
& (\forall X4. (m1_subset_1 X4 (u1_struct_0 (k12_lpspace2 X0 X1 X2 \\
& X3))) \Rightarrow ((\exists X5. ((v1_funct_1 X5) \wedge (m1_subset_1 X5 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 k1_numbers)))) \wedge ((X5 \in k1_lpspace2 X0 X1 X2 X3) \wedge \\
& (X4 = k5_lpspace2 X0 X1 X2 X5 X3))) \wedge (\forall X5. ((v1_funct_1 X5) \wedge \\
& (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))) \Rightarrow \\
& (\neg (X5 \in X4) \wedge (\forall X6. (m1_subset_1 X6 k1_numbers) \Rightarrow (\neg (r1_xxreal_0 \\
& k6_numbers X6) \wedge ((X6 = k1_mesfunc6 X0 X1 X2 (k2_mesfun6c X3 X0 (k56_valued_1 \\
& X0 k1_numbers X5))) \wedge (k1_normsp_0 (k12_lpspace2 X0 X1 X2 X3) X4 = \\
& k4_power X6 (k10_real_1 np_1 X3))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge \\
& ((v1_prob_1 X1 X0) \wedge ((v4_prob_1 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k1_zfmisc_1 X0)))))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 X1 k7_numbers) \wedge ((v10_valued_0 X2) \wedge ((v6_supinf_2 X2) \wedge ((v4_measure1 \\
& X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 k7_numbers)))))) \Rightarrow \\
& (\forall X3.((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 k1_numbers)))) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge (m1_subset_1 \\
& X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))) \Rightarrow (\forall X5.(\\
& (v2_xxreal_0 X5) \wedge (m1_subset_1 X5 k1_numbers) \Rightarrow (((X3 \in k1_lpspace2 \\
& X0 X1 X2 X5) \wedge (X4 \in k5_lpspace2 X0 X1 X2 X3 X5)) \Rightarrow (k5_lpspace2 X0 X1 X2 \\
& X3 X5 = k5_lpspace2 X0 X1 X2 X4 X5))))))
\end{aligned} \tag{2}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge \\
& ((v1_prob_1 X1 X0) \wedge ((v4_prob_1 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k1_zfmisc_1 X0)))))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 X1 k7_numbers) \wedge ((v10_valued_0 X2) \wedge ((v6_supinf_2 X2) \wedge ((v4_measure1 \\
& X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 k7_numbers)))))) \Rightarrow \\
& (\forall X3.((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 k1_numbers)))) \Rightarrow (\forall X4.((v2_xxreal_0 X4) \wedge (m1_subset_1 \\
& X4 k1_numbers) \Rightarrow (\forall X5.(m1_subset_1 X5 (u1_struct_0 (k12_lpspace2 \\
& X0 X1 X2 X4)) \Rightarrow ((X3 \in X5) \Rightarrow ((X5 = k5_lpspace2 X0 X1 X2 X3 X4) \wedge (\exists X6. \\
& (m1_subset_1 X6 k1_numbers) \wedge ((r1_xxreal_0 k6_numbers X6) \wedge ((\\
& X6 = k1_mesfunc6 X0 X1 X2 (k2_mesfunc6c X4 X0 (k56_valued_1 X0 k1_numbers \\
& X3))) \wedge (k1_normsp_0 (k12_lpspace2 X0 X1 X2 X4) X5 = k4_power X6 (k10_real_1 \\
& np_1 X4))))))))))
\end{aligned}$$