

t27_matrix_3 (TMY- sEip7RCXekPsgRkWAJR71AosxDoy3YMp)

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Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_setwiseo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_matrix_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_setwiseo : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_matrix_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 \\
& X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& X0 X0) X0)))))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X1 \\
& X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))))) \Rightarrow (\forall X4. \\
& (m1_subset_1 X4 X0) \Rightarrow (\forall X5.(m1_subset_1 X5 X1) \Rightarrow (k3_funct_2 \\
& X1 X0 (k10_funcop_1 X0 X1 X2 X4 X3) X5 = k5_binop_1 X0 X2 X4 (k3_funct_2 \\
& X1 X0 X3 X5))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 \\
& X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& X0 X0) X0)))))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X1 \\
& X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))))) \Rightarrow (\forall X4. \\
& (m1_subset_1 X4 X0) \Rightarrow (\forall X5.(m1_subset_1 X5 X1) \Rightarrow (k3_funct_2 \\
& X1 X0 (k9_funcop_1 X0 X1 X2 X3 X4) X5 = k5_binop_1 X0 X2 (k3_funct_2 \\
& X1 X0 X3 X5) X4))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\
& \quad (\forall X2.(\neg v1_xboole_0 X2) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge \\
& \quad ((v1_funct_2 X3 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& \quad (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (\forall X4.((v1_funct_1 \\
& X4) \wedge ((v1_funct_2 X4 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\
& \quad (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (\forall X5.((v1_funct_1 \\
& X5) \wedge ((v1_funct_2 X5 X1 X0) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 \\
& \quad X1 X0)))))) \Rightarrow (\forall X6.((v1_funct_1 X6) \wedge ((v1_funct_2 X6 X2 X0) \wedge \\
& \quad (m1_subset_1 X6 (k1_zfmisc_1 (k2_zfmisc_1 X2 X0)))))) \Rightarrow (((v1_binop_1 \\
& \quad X3 X0) \wedge (v2_binop_1 X3 X0)) \Rightarrow (\forall X7.(m1_subset_1 X7 X1) \Rightarrow (\forall X8. \\
& (m1_subset_1 X8 X2) \Rightarrow (k7_setwiseo (k2_zfmisc_1 X1 X2) X0 X3 (k8_matrix_3 \\
& \quad X1 X2 (k2_setwiseo X1 X7) (k2_setwiseo X2 X8)) (k9_matrix_3 X1 X2 \\
& \quad X0 X4 X5 X6) = k7_setwiseo X1 X0 X3 (k2_setwiseo X1 X7) (k9_funcop_1 \\
& \quad X0 X1 X4 X5 (k7_setwiseo X2 X0 X3 (k2_setwiseo X2 X8) X6))))))))) \\
& \hspace{15em} (3)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\
& \quad (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 \\
& X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& \quad X0 X0) X0)))))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X1 \\
& X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))))) \Rightarrow (((\\
& \quad v1_binop_1 X2 X0) \wedge (v2_binop_1 X2 X0)) \Rightarrow (\forall X4.(m1_subset_1 \\
& X4 X1) \Rightarrow (k7_setwiseo X1 X0 X2 (k2_setwiseo X1 X4) X3 = k3_funct_2 X1 \\
& \quad X0 X3 X4)))))) \\
& \hspace{15em} (4)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\
& X0) \wedge (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 X0) X0) \wedge \\
& \quad (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) \\
& \quad X0)))))) \wedge (((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X1 X0) \wedge (m1_subset_1 \\
& \quad X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))))) \wedge (m1_subset_1 X4 X0))) \Rightarrow \\
& \quad ((v1_funct_1 (k9_funcop_1 X0 X1 X2 X3 X4) \wedge ((v1_funct_2 (k9_funcop_1 \\
& X0 X1 X2 X3 X4) X1 X0) \wedge (m1_subset_1 (k9_funcop_1 X0 X1 X2 X3 X4) (k1_zfmisc_1 \\
& \quad (k2_zfmisc_1 X1 X0)))))) \\
& \hspace{15em} (5)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\
& (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& \quad (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 X3 X0))) \Rightarrow (m1_subset_1 (\\
& \quad k3_funct_2 X0 X1 X2 X3) X1) \\
& \hspace{15em} (6)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. ((\neg v1_xboole_0 \\
& X0) \wedge (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 X0) X0) \wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) \\
& X0)))) \wedge ((m1_subset_1 X3 X0) \wedge ((v1_funct_1 X4) \wedge ((v1_funct_2 \\
& X4 X1 X0) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0))))))))) \Rightarrow \\
& ((v1_funct_1 (k10_funcop_1 X0 X1 X2 X3 X4) \wedge ((v1_funct_2 (k10_funcop_1 \\
& X0 X1 X2 X3 X4) X1 X0) \wedge (m1_subset_1 (k10_funcop_1 X0 X1 X2 X3 X4) (k1_zfmisc_1 \\
& (k2_zfmisc_1 X1 X0))))))
\end{aligned} \tag{7}$$

Theorem 1

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (\neg v1_xboole_0 X1) \Rightarrow \\
& (\forall X2. (\neg v1_xboole_0 X2) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge \\
& ((v1_funct_2 X3 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (\forall X4. ((v1_funct_1 \\
& X4) \wedge ((v1_funct_2 X4 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (\forall X5. ((v1_funct_1 \\
& X5) \wedge ((v1_funct_2 X5 X1 X0) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X1 X0)))))) \Rightarrow (\forall X6. ((v1_funct_1 X6) \wedge ((v1_funct_2 X6 X2 X0) \wedge \\
& (m1_subset_1 X6 (k1_zfmisc_1 (k2_zfmisc_1 X2 X0)))))) \Rightarrow (((v1_binop_1 \\
& X3 X0) \wedge ((v2_binop_1 X3 X0) \wedge (v1_binop_1 X4 X0))) \Rightarrow (\forall X7. (\\
& m1_subset_1 X7 X1) \Rightarrow (\forall X8. (m1_subset_1 X8 X2) \Rightarrow (k7_setwiseo \\
& (k2_zfmisc_1 X1 X2) X0 X3 (k8_matrix_3 X1 X2 (k2_setwiseo X1 X7) (\\
& k2_setwiseo X2 X8)) (k9_matrix_3 X1 X2 X0 X4 X5 X6) = k7_setwiseo X2 \\
& X0 X3 (k2_setwiseo X2 X8) (k10_funcop_1 X0 X2 X4 (k7_setwiseo X1 X0 \\
& X3 (k2_setwiseo X1 X7) X5) X6)))))))))
\end{aligned}$$