

t28_matrix_3 (TMVShp- wmML9VqHX9YiGh3mYnivK8Cg1sytd)

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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 $k5_finsub_1 : \iota \Rightarrow \iota$ be given. Let $v1_setwiseo : \iota \Rightarrow \iota \Rightarrow o$ 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 $v1_finseqop : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r6_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $k9_matrix_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (\neg v1_xboole_0 X1) \Rightarrow \\
& \quad (\forall X2. (\neg v1_xboole_0 X2) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge \\
& \quad ((v1_funct_2 X3 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& \quad (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (\forall X4. ((v1_funct_1 \\
& X4) \wedge ((v1_funct_2 X4 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\
& \quad (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (\forall X5. ((v1_funct_1 \\
& X5) \wedge ((v1_funct_2 X5 X1 X0) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 \\
& \quad X1 X0)))))) \Rightarrow (\forall X6. ((v1_funct_1 X6) \wedge ((v1_funct_2 X6 X2 X0) \wedge \\
& \quad (m1_subset_1 X6 (k1_zfmisc_1 (k2_zfmisc_1 X2 X0)))))) \Rightarrow (\forall X7. \\
& \quad (m1_subset_1 X7 (k5_finsub_1 X1)) \Rightarrow (\forall X8. (m1_subset_1 X8 \\
& \quad (k5_finsub_1 X2)) \Rightarrow (((v1_setwiseo X3 X0) \wedge ((v1_binop_1 X3 X0) \wedge \\
& \quad ((v2_binop_1 X3 X0) \wedge ((v1_finseqop X3 X0) \wedge (r6_binop_1 X0 X4 X3)))))) \Rightarrow \\
& \quad (k7_setwiseo (k2_zfmisc_1 X1 X2) X0 X3 (k8_matrix_3 X1 X2 X7 X8) (\\
& \quad k9_matrix_3 X1 X2 X0 X4 X5 X6) = k7_setwiseo X1 X0 X3 X7 (k9_funcop_1 \\
& \quad X0 X1 X4 X5 (k7_setwiseo X2 X0 X3 X8 X6)))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\
& (\forall X2.(m1_subset_1 X2 (k5_finsub_1 X0)) \Rightarrow (\forall X3.(m1_subset_1 \\
& X3 X1) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (k2_zfmisc_1 \\
& X1 X1) X1) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& X1 X1) X1)))) \Rightarrow (\forall X5.((v1_funct_1 X5) \wedge ((v1_funct_2 X5 (\\
& k2_zfmisc_1 X1 X1) X1) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k2_zfmisc_1 X1 X1) X1)))) \Rightarrow (\forall X6.(((v1_funct_1 X6) \wedge ((v1_funct_2 \\
& X6 X0 X1) \wedge (m1_subset_1 X6 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \Rightarrow \\
& (((v1_binop_1 X4 X1) \wedge ((v2_binop_1 X4 X1) \wedge ((v1_setwiseo X4 X1) \wedge \\
& ((v1_finseqop X4 X1) \wedge (r6_binop_1 X1 X5 X4)))) \Rightarrow (k5_binop_1 X1 \\
& X5 (k7_setwiseo X0 X1 X4 X2 X6) X3 = k7_setwiseo X0 X1 X4 X2 (k9_funcop_1 \\
& X1 X0 X5 X6 X3)))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\
& (\forall X2.(m1_subset_1 X2 (k5_finsub_1 X0)) \Rightarrow (\forall X3.(m1_subset_1 \\
& X3 X1) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (k2_zfmisc_1 \\
& X1 X1) X1) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& X1 X1) X1)))) \Rightarrow (\forall X5.((v1_funct_1 X5) \wedge ((v1_funct_2 X5 (\\
& k2_zfmisc_1 X1 X1) X1) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k2_zfmisc_1 X1 X1) X1)))) \Rightarrow (\forall X6.(((v1_funct_1 X6) \wedge ((v1_funct_2 \\
& X6 X0 X1) \wedge (m1_subset_1 X6 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \Rightarrow \\
& (((v1_binop_1 X4 X1) \wedge ((v2_binop_1 X4 X1) \wedge ((v1_setwiseo X4 X1) \wedge \\
& ((v1_finseqop X4 X1) \wedge (r6_binop_1 X1 X5 X4)))) \Rightarrow (k5_binop_1 X1 \\
& X5 X3 (k7_setwiseo X0 X1 X4 X2 X6) = k7_setwiseo X0 X1 X4 X2 (k10_funcop_1 \\
& X1 X0 X5 X3 X6)))))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\
& X0) \wedge ((\neg v1_xboole_0 X1) \wedge (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 \\
& X1 X1) X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& X1 X1) X1)))) \wedge ((m1_subset_1 X3 (k5_finsub_1 X0)) \wedge ((v1_funct_1 \\
& X4) \wedge ((v1_funct_2 X4 X0 X1) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 X1))))))))) \Rightarrow (m1_subset_1 (k7_setwiseo X0 X1 X2 X3 X4) X1)
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\ & \quad (\forall X2.(\neg v1_xboole_0 X2) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge \\ & \quad ((v1_funct_2 X3 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & \quad (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (\forall X4.((v1_funct_1 \\ X4) \wedge ((v1_funct_2 X4 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\ & \quad (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (\forall X5.((v1_funct_1 \\ X5) \wedge ((v1_funct_2 X5 X1 X0) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 \\ & \quad X1 X0)))))) \Rightarrow (\forall X6.((v1_funct_1 X6) \wedge ((v1_funct_2 X6 X2 X0) \wedge \\ & \quad (m1_subset_1 X6 (k1_zfmisc_1 (k2_zfmisc_1 X2 X0)))))) \Rightarrow (\forall X7. \\ & \quad (m1_subset_1 X7 (k5_finsub_1 X1)) \Rightarrow (\forall X8.(m1_subset_1 X8 \\ & \quad (k5_finsub_1 X2)) \Rightarrow (((v1_setwiseo X3 X0) \wedge ((v1_binop_1 X3 X0) \wedge \\ & \quad ((v2_binop_1 X3 X0) \wedge ((v1_finseqop X3 X0) \wedge ((r6_binop_1 X0 X4 X3) \wedge \\ & \quad (v1_binop_1 X4 X0)))))) \Rightarrow (k7_setwiseo (k2_zfmisc_1 X1 X2) X0 X3 \\ & \quad (k8_matrix_3 X1 X2 X7 X8) (k9_matrix_3 X1 X2 X0 X4 X5 X6) = k7_setwiseo \\ X2 X0 X3 X8 (k10_funcop_1 X0 X2 X4 (k7_setwiseo X1 X0 X3 X7 X5) X6)))))))))) \end{aligned}$$