

t15_anproj_2 (TM- VArx1y8L1ccW2URATmiTKFjRLCgj6HzUt)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k9_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funcsdom : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_funcsdom : \iota \Rightarrow \iota$ be given. Let $k2_funcsdom : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_funcsdom : \iota \Rightarrow \iota$ be given. Let $k1_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_funcsdom : \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (m2_funct_2 X1 X0 k1_numbers \\
& (k9_funct_2 X0 k1_numbers)) \Rightarrow (\forall X2. (m2_funct_2 X2 X0 k1_numbers \\
& (k9_funct_2 X0 k1_numbers)) \Rightarrow (\forall X3. (m2_funct_2 X3 X0 k1_numbers \\
& (k9_funct_2 X0 k1_numbers)) \Rightarrow (\forall X4. (m1_subset_1 X4 X0) \Rightarrow \\
& (\forall X5. (m1_subset_1 X5 X0) \Rightarrow (\forall X6. (m1_subset_1 X6 X0) \Rightarrow \\
& (((X0 = k8_domain_1 X0 X4 X5 X6) \wedge ((k3_funct_2 X0 k1_numbers X1 X4 = \\
& np_1) \wedge ((\forall X7. (X7 \in X0) \Rightarrow ((X7 = X4) \vee (k1_funct_1 X1 X7 = k6_numbers))) \wedge \\
& ((k3_funct_2 X0 k1_numbers X2 X5 = np_1) \wedge ((\forall X7. (X7 \in X0) \Rightarrow \\
& ((X7 = X5) \vee (k1_funct_1 X2 X7 = k6_numbers))) \wedge ((k3_funct_2 X0 k1_numbers \\
& X3 X6 = np_1) \wedge (\forall X7. (X7 \in X0) \Rightarrow ((X7 = X6) \vee (k1_funct_1 X3 X7 = \\
& k6_numbers)))))))))) \Rightarrow ((X4 = X5) \vee ((X4 = X6) \vee ((X5 = X6) \vee (\forall X7. \\
& (m2_funct_2 X7 X0 k1_numbers (k9_funct_2 X0 k1_numbers)) \Rightarrow (\exists X8. \\
& (m1_subset_1 X8 k1_numbers) \wedge (\exists X9. (m1_subset_1 X9 k1_numbers) \wedge \\
& (\exists X10. (m1_subset_1 X10 k1_numbers) \wedge (r2_funct_2 X0 k1_numbers \\
& X7 (k1_funcsdom X0 k1_numbers (k5_funcsdom X0) (k1_funcsdom X0 \\
& k1_numbers (k5_funcsdom X0) (k2_funcsdom X0 k1_numbers k1_numbers \\
& (k9_funct_2 X0 k1_numbers) (k7_funcsdom X0) (k1_domain_1 k1_numbers \\
& (k9_funct_2 X0 k1_numbers) X8 X1)) (k2_funcsdom X0 k1_numbers k1_numbers \\
& (k9_funct_2 X0 k1_numbers) (k7_funcsdom X0) (k1_domain_1 k1_numbers \\
& (k9_funct_2 X0 k1_numbers) X9 X2))) (k2_funcsdom X0 k1_numbers \\
& k1_numbers (k9_funct_2 X0 k1_numbers) (k7_funcsdom X0) (k1_domain_1 \\
& k1_numbers (k9_funct_2 X0 k1_numbers) X10 X3))))))))))))))))) \\
& \tag{1}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m2_funct_2 X1 X0 k1_numbers \\
& (k9_funct_2 X0 k1_numbers)) \Rightarrow (\forall X2.(m2_funct_2 X2 X0 k1_numbers \\
& (k9_funct_2 X0 k1_numbers)) \Rightarrow (\forall X3.(m2_funct_2 X3 X0 k1_numbers \\
& (k9_funct_2 X0 k1_numbers)) \Rightarrow (\forall X4.(m1_subset_1 X4 X0) \Rightarrow \\
& (\forall X5.(m1_subset_1 X5 X0) \Rightarrow (\forall X6.(m1_subset_1 X6 X0) \Rightarrow \\
& (((k3_funct_2 X0 k1_numbers X1 X4 = np_1) \wedge (\forall X7.(X7 \in X0) \Rightarrow \\
& ((X7 = X4) \vee (k1_funct_1 X1 X7 = k6_numbers)))) \wedge ((k3_funct_2 X0 k1_numbers \\
& X2 X5 = np_1) \wedge (\forall X7.(X7 \in X0) \Rightarrow ((X7 = X5) \vee (k1_funct_1 X2 X7 = \\
& k6_numbers))) \wedge ((k3_funct_2 X0 k1_numbers X3 X6 = np_1) \wedge (\forall X7. \\
& (X7 \in X0) \Rightarrow ((X7 = X6) \vee (k1_funct_1 X3 X7 = k6_numbers)))))) \Rightarrow ((X4 = \\
& X5) \vee (X4 = X6) \vee ((X5 = X6) \vee (\forall X7.(m1_subset_1 X7 k1_numbers) \Rightarrow \\
& (\forall X8.(m1_subset_1 X8 k1_numbers) \Rightarrow (\forall X9.(m1_subset_1 \\
& X9 k1_numbers) \Rightarrow ((r2_funct_2 X0 k1_numbers (k1_funcsdom X0 k1_numbers \\
& (k5_funcsdom X0) (k1_funcsdom X0 k1_numbers (k5_funcsdom X0) (\\
& k2_funcsdom X0 k1_numbers k1_numbers (k9_funct_2 X0 k1_numbers) \\
& (k7_funcsdom X0) (k1_domain_1 k1_numbers (k9_funct_2 X0 k1_numbers) \\
& X7 X1)) (k2_funcsdom X0 k1_numbers k1_numbers (k9_funct_2 X0 k1_numbers) \\
& (k7_funcsdom X0) (k1_domain_1 k1_numbers (k9_funct_2 X0 k1_numbers) \\
& X8 X2))) (k2_funcsdom X0 k1_numbers k1_numbers (k9_funct_2 X0 k1_numbers) \\
& (k7_funcsdom X0) (k1_domain_1 k1_numbers (k9_funct_2 X0 k1_numbers) \\
& X9 X3))) (k8_funcsdom X0) \Rightarrow ((X7 = k6_numbers) \wedge ((X8 = k6_numbers) \wedge \\
& (X9 = k6_numbers)))))))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow \\
& (\exists X2.(m2_funct_2 X2 X0 k1_numbers (k9_funct_2 X0 k1_numbers)) \wedge \\
& ((k3_funct_2 X0 k1_numbers X2 X1 = np_1) \wedge (\forall X3.(X3 \in X0) \Rightarrow \\
& ((X3 = X1) \vee (k1_funct_1 X2 X3 = k6_numbers))))))
\end{aligned} \tag{3}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow \\
& (\forall X2.(m1_subset_1 X2 X0) \Rightarrow (\forall X3.(m1_subset_1 X3 X0) \Rightarrow \\
& (\neg(X0 = k8_domain_1 X0 X1 X2 X3) \wedge ((X1 \neq X2) \wedge ((X1 \neq X3) \wedge ((X2 \neq X3) \wedge (\\
& \forall X4.(m2_funct_2 X4 X0 k1_numbers (k9_funct_2 X0 k1_numbers)) \Rightarrow \\
& (\forall X5.(m2_funct_2 X5 X0 k1_numbers (k9_funct_2 X0 k1_numbers)) \Rightarrow \\
& (\forall X6.(m2_funct_2 X6 X0 k1_numbers (k9_funct_2 X0 k1_numbers)) \Rightarrow \\
& (\neg(\forall X7.(m1_subset_1 X7 k1_numbers) \Rightarrow (\forall X8.(m1_subset_1 \\
& X8 k1_numbers) \Rightarrow (\forall X9.(m1_subset_1 X9 k1_numbers) \Rightarrow ((r2_funct_2 \\
& X0 k1_numbers (k1_funcsdom X0 k1_numbers (k5_funcsdom X0) (k1_funcsdom \\
& X0 k1_numbers (k5_funcsdom X0) (k2_funcsdom X0 k1_numbers k1_numbers \\
& (k9_funct_2 X0 k1_numbers) (k7_funcsdom X0) (k1_domain_1 k1_numbers \\
& (k9_funct_2 X0 k1_numbers) X7 X4)) (k2_funcsdom X0 k1_numbers k1_numbers \\
& (k9_funct_2 X0 k1_numbers) (k7_funcsdom X0) (k1_domain_1 k1_numbers \\
& (k9_funct_2 X0 k1_numbers) X8 X5))) (k2_funcsdom X0 k1_numbers \\
& k1_numbers (k9_funct_2 X0 k1_numbers) (k7_funcsdom X0) (k1_domain_1 \\
& k1_numbers (k9_funct_2 X0 k1_numbers) X9 X6))) (k8_funcsdom X0)) \Rightarrow \\
& ((X7 = k6_numbers) \wedge ((X8 = k6_numbers) \wedge (X9 = k6_numbers)))))) \wedge \\
& (\forall X7.(m2_funct_2 X7 X0 k1_numbers (k9_funct_2 X0 k1_numbers)) \Rightarrow \\
& (\exists X8.(m1_subset_1 X8 k1_numbers) \wedge (\exists X9.(m1_subset_1 \\
& X9 k1_numbers) \wedge (\exists X10.(m1_subset_1 X10 k1_numbers) \wedge (r2_funct_2 \\
& X0 k1_numbers X7 (k1_funcsdom X0 k1_numbers (k5_funcsdom X0) (k1_funcsdom \\
& X0 k1_numbers (k5_funcsdom X0) (k2_funcsdom X0 k1_numbers k1_numbers \\
& (k9_funct_2 X0 k1_numbers) (k7_funcsdom X0) (k1_domain_1 k1_numbers \\
& (k9_funct_2 X0 k1_numbers) X8 X4)) (k2_funcsdom X0 k1_numbers k1_numbers \\
& (k9_funct_2 X0 k1_numbers) (k7_funcsdom X0) (k1_domain_1 k1_numbers \\
& (k9_funct_2 X0 k1_numbers) X9 X5))) (k2_funcsdom X0 k1_numbers \\
& k1_numbers (k9_funct_2 X0 k1_numbers) (k7_funcsdom X0) (k1_domain_1 \\
& k1_numbers (k9_funct_2 X0 k1_numbers) X10 X6)))))))))))))
\end{aligned}$$