

t44_topalg_1
(TMVBL3V9gETinN6LqPNyJAcbEfcRXudxUKc)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $v1_borsuk_2 : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r4_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_borsuk_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& \quad X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& \quad (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& \quad (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
& \quad (\forall X5.(m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (\forall X6.(m1_subset_1 \\
& \quad X6 (u1_struct_0 X0)) \Rightarrow ((r1_borsuk_6 X0 X1 X2) \wedge ((r1_borsuk_6 X0 \\
& \quad X2 X3) \wedge ((r1_borsuk_6 X0 X3 X4) \wedge ((r1_borsuk_6 X0 X4 X5) \wedge (r1_borsuk_6 \\
& \quad X0 X1 X6)))))) \Rightarrow (\forall X7.(m1_borsuk_2 X7 X0 X1 X2) \Rightarrow (\forall X8. \\
& \quad (m1_borsuk_2 X8 X0 X2 X3) \Rightarrow (\forall X9.(m1_borsuk_2 X9 X0 X3 X4) \Rightarrow \\
& \quad (\forall X10.(m1_borsuk_2 X10 X0 X4 X5) \Rightarrow (\forall X11.(m1_borsuk_2 \\
& \quad X11 X0 X6 X3) \Rightarrow (r3_borsuk_2 X0 X1 X5 (k1_borsuk_2 X0 X1 X4 X5 (k1_borsuk_2 \\
& \quad X0 X1 X2 X4 X7 (k1_borsuk_2 X0 X2 X3 X4 X8 X9)) X10) (k1_borsuk_2 X0 X1 \\
& \quad X6 X5 (k1_borsuk_2 X0 X1 X3 X6 (k1_borsuk_2 X0 X1 X2 X3 X7 X8) (k2_borsuk_2 \\
& \quad X0 X6 X3 X11)) (k1_borsuk_2 X0 X6 X4 X5 (k1_borsuk_2 X0 X6 X3 X4 X11 X9) \\
& \quad X10)))))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v2_struct_0 \\
& \quad X0) \wedge ((v2_pre_topc X0) \wedge ((v1_borsuk_2 X0) \wedge (l1_pre_topc X0)))) \wedge \\
& \quad ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge ((m1_subset_1 X2 (u1_struct_0 \\
& \quad X0)) \wedge ((m1_borsuk_2 X3 X0 X1 X2) \wedge (m1_borsuk_2 X4 X0 X1 X2)))) \Rightarrow (\\
& \quad (r4_borsuk_2 X0 X1 X2 X3 X4) \Leftrightarrow (r3_borsuk_2 X0 X1 X2 X3 X4))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(v2_pre_topc \\ & X0)\wedge(l1_pre_topc X0))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(\\ & m1_subset_1 X2 (u1_struct_0 X0))))\Rightarrow((r1_borsuk_6 X0 X1 X2)\Leftrightarrow(r1_borsuk_2 \\ & X0 X1 X2)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 \\ & X0)\wedge(v2_pre_topc X0)\wedge(l1_pre_topc X0))\wedge((m1_subset_1 X1 (\\ & u1_struct_0 X0))\wedge((m1_subset_1 X2 (u1_struct_0 X0))\wedge(m1_borsuk_2 \\ & X3 X0 X1 X2))))\Rightarrow(m1_borsuk_2 (k2_borsuk_2 X0 X1 X2 X3) X0 X2 X1) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & (((\neg v2_struct_0 X0)\wedge(v2_pre_topc X0)\wedge(l1_pre_topc X0))\wedge(\\ & (m1_subset_1 X1 (u1_struct_0 X0))\wedge((m1_subset_1 X2 (u1_struct_0 \\ & X0))\wedge((m1_subset_1 X3 (u1_struct_0 X0))\wedge((m1_borsuk_2 X4 X0 X1 \\ & X2)\wedge(m1_borsuk_2 X5 X0 X2 X3))))))\Rightarrow(m1_borsuk_2 (k1_borsuk_2 \\ & X0 X1 X2 X3 X4 X5) X0 X1 X3) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_pre_topc X0)\Rightarrow((v1_borsuk_2 X0)\Leftrightarrow(\forall X1.(\\ & m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2.(m1_subset_1 X2 \\ & (u1_struct_0 X0))\Rightarrow(r1_borsuk_2 X0 X1 X2)))) \end{aligned} \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0.(((\neg v2_struct_0 X0)\wedge(v2_pre_topc X0)\wedge((v1_borsuk_2 \\ & X0)\wedge(l1_pre_topc X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0))\Rightarrow(\forall X2.(m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow(\forall X3. \\ & (m1_subset_1 X3 (u1_struct_0 X0))\Rightarrow(\forall X4.(m1_subset_1 X4 \\ & (u1_struct_0 X0))\Rightarrow(\forall X5.(m1_subset_1 X5 (u1_struct_0 X0))\Rightarrow \\ & (\forall X6.(m1_subset_1 X6 (u1_struct_0 X0))\Rightarrow(\forall X7.(m1_borsuk_2 \\ & X7 X0 X1 X2)\Rightarrow(\forall X8.(m1_borsuk_2 X8 X0 X2 X3)\Rightarrow(\forall X9.(\\ & m1_borsuk_2 X9 X0 X3 X4)\Rightarrow(\forall X10.(m1_borsuk_2 X10 X0 X4 X5)\Rightarrow \\ & (\forall X11.(m1_borsuk_2 X11 X0 X6 X3)\Rightarrow(r4_borsuk_2 X0 X1 X5 (k1_borsuk_2 \\ & X0 X1 X4 X5 (k1_borsuk_2 X0 X1 X2 X4 X7 (k1_borsuk_2 X0 X2 X3 X4 X8 X9)) \\ & X10) (k1_borsuk_2 X0 X1 X6 X5 (k1_borsuk_2 X0 X1 X3 X6 (k1_borsuk_2 \\ & X0 X1 X2 X3 X7 X8) (k2_borsuk_2 X0 X6 X3 X11)) (k1_borsuk_2 X0 X6 X4 X5 \\ & (k1_borsuk_2 X0 X6 X3 X4 X11 X9) X10)))))))))) \end{aligned}$$