

t41_topalg_1 (TMH-
PvXqqVX9bT6Shync6GLZJeZmMo3QFr9k)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ 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 $r1_borsuk_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_borsuk_2 X3 \\ & X0 X1 X2) \Rightarrow (\forall X4.(m1_borsuk_2 X4 X0 X1 X2) \Rightarrow (\forall X5.(m1_borsuk_2 \\ & X5 X0 X1 X2) \Rightarrow (((r3_borsuk_2 X0 X1 X2 X3 X4) \wedge (r3_borsuk_2 X0 X1 X2 X4 \\ & X5)) \Rightarrow (r3_borsuk_2 X0 X1 X2 X3 X5)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_borsuk_2 X4 X0 X1 X2) \Rightarrow (\forall X5. \\ & (m1_borsuk_2 X5 X0 X1 X2) \Rightarrow (\forall X6.(m1_borsuk_2 X6 X0 X2 X3) \Rightarrow \\ & (\forall X7.(m1_borsuk_2 X7 X0 X2 X3) \Rightarrow (((r1_borsuk_6 X0 X1 X2) \wedge \\ & ((r1_borsuk_6 X0 X2 X3) \wedge ((r3_borsuk_2 X0 X1 X2 X4 X5) \wedge (r3_borsuk_2 \\ & X0 X2 X3 X6 X7)))) \Rightarrow (r3_borsuk_2 X0 X1 X3 (k1_borsuk_2 X0 X1 X2 X3 X4 \\ & X6) (k1_borsuk_2 X0 X1 X2 X3 X5 X7)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow (((r1_borsuk_6 X0 X1 X2) \wedge (r1_borsuk_6 X0 X2 \\ & X3)) \Rightarrow (r1_borsuk_6 X0 X1 X3)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
& (((r1_borsuk_6 X0 X1 X2) \wedge ((r1_borsuk_6 X0 X1 X3) \wedge (r1_borsuk_6 \\
& X0 X3 X4))) \Rightarrow (\forall X5.(m1_borsuk_2 X5 X0 X1 X2) \Rightarrow (\forall X6.(\\
& m1_borsuk_2 X6 X0 X3 X4) \Rightarrow (\forall X7.(m1_borsuk_2 X7 X0 X1 X3) \Rightarrow (\\
& r3_borsuk_2 X0 X1 X3 (k1_borsuk_2 X0 X1 X4 X3 (k1_borsuk_2 X0 X1 X3 \\
& X4 (k1_borsuk_2 X0 X1 X1 X3 (k1_borsuk_2 X0 X1 X2 X1 X5 (k2_borsuk_2 \\
& X0 X1 X2 X5)) X7) X6) (k2_borsuk_2 X0 X3 X4 X6)) X7))))))))) \\
& \tag{4}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
& (\forall X5.(m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (((r1_borsuk_6 \\
& X0 X1 X2) \wedge ((r1_borsuk_6 X0 X2 X3) \wedge ((r1_borsuk_6 X0 X3 X4) \wedge (r1_borsuk_6 \\
& X0 X4 X5)))) \Rightarrow (\forall X6.(m1_borsuk_2 X6 X0 X1 X2) \Rightarrow (\forall X7. \\
& (m1_borsuk_2 X7 X0 X2 X3) \Rightarrow (\forall X8.(m1_borsuk_2 X8 X0 X3 X4) \Rightarrow \\
& (\forall X9.(m1_borsuk_2 X9 X0 X4 X5) \Rightarrow (r3_borsuk_2 X0 X1 X5 (k1_borsuk_2 \\
& X0 X1 X4 X5 (k1_borsuk_2 X0 X1 X3 X4 (k1_borsuk_2 X0 X1 X2 X3 X6 X7) X8) \\
& X9) (k1_borsuk_2 X0 X1 X2 X5 X6 (k1_borsuk_2 X0 X2 X4 X5 (k1_borsuk_2 \\
& X0 X2 X3 X4 X7 X8) X9))))))))) \\
& \tag{5}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v2_struct_0 \\
& X0) \wedge (l1_pre_topc X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge ((\\
& m1_subset_1 X2 (u1_struct_0 X0)) \wedge ((m1_borsuk_2 X3 X0 X1 X2) \wedge (m1_borsuk_2 \\
& X4 X0 X1 X2)))) \Rightarrow ((r3_borsuk_2 X0 X1 X2 X3 X4) \Rightarrow (r3_borsuk_2 X0 X1 \\
& X2 X4 X3)) \\
& \tag{6}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v2_pre_topc \\
& X0) \wedge (l1_pre_topc X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\
& m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow ((r1_borsuk_6 X0 X1 X2) \Rightarrow (r1_borsuk_6 \\
& X0 X2 X1)) \\
& \tag{7}
\end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 \\ & X0)\wedge((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\wedge((m1_subset_1\ X1\ (\\ & u1_struct_0\ X0))\wedge((m1_subset_1\ X2\ (u1_struct_0\ X0))\wedge(m1_borsuk_2 \\ & X3\ X0\ X1\ X2))))\Rightarrow(m1_borsuk_2\ (k2_borsuk_2\ X0\ X1\ X2\ X3)\ X0\ X2\ X1) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & (((\neg v2_struct_0\ X0)\wedge((v2_pre_topc\ X0)\wedge(l1_pre_topc\ X0))\wedge(\\ & (m1_subset_1\ X1\ (u1_struct_0\ X0))\wedge((m1_subset_1\ X2\ (u1_struct_0 \\ & X0))\wedge((m1_subset_1\ X3\ (u1_struct_0\ X0))\wedge((m1_borsuk_2\ X4\ X0\ X1 \\ & X2)\wedge(m1_borsuk_2\ X5\ X0\ X2\ X3))))))\Rightarrow(m1_borsuk_2\ (k1_borsuk_2 \\ & X0\ X1\ X2\ X3\ X4\ X5)\ X0\ X1\ X3) \end{aligned} \quad (9)$$

Theorem 1

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