

t29_topalg_1 (TMWkft- neQVSTM63cy9C8C2G444gGom5Md8Q)

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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 $k2_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_borsuk_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

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

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
& (\forall X5.(m1_borsuk_2 X5 X0 X1 X2) \Rightarrow (\forall X6.(m1_borsuk_2 \\
& X6 X0 X2 X3) \Rightarrow (\forall X7.(m1_borsuk_2 X7 X0 X3 X4) \Rightarrow (((r1_borsuk_6 \\
& X0 X1 X2) \wedge (r1_borsuk_6 X0 X2 X3) \wedge (r1_borsuk_6 X0 X3 X4)) \Rightarrow (r3_borsuk_2 \\
& X0 X1 X4 (k1_borsuk_2 X0 X1 X3 X4 (k1_borsuk_2 X0 X1 X2 X3 X5 X6) X7) (\\
& k1_borsuk_2 X0 X1 X2 X4 X5 (k1_borsuk_2 X0 X2 X3 X4 X6 X7)))))))))) \\
& \tag{3}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X0)) \Rightarrow (((r1_borsuk_6 X0 X1 X2) \wedge (r1_borsuk_6 X0 X2 \\
& X3)) \Rightarrow (r1_borsuk_6 X0 X1 X3)))))) \\
& \tag{4}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X0)) \Rightarrow (((r1_borsuk_6 X0 X1 X2) \wedge (r1_borsuk_6 X0 X3 \\
& X1)) \Rightarrow (\forall X4.(m1_borsuk_2 X4 X0 X1 X2) \Rightarrow (\forall X5.(m1_borsuk_2 \\
& X5 X0 X1 X2) \Rightarrow (\forall X6.(m1_borsuk_2 X6 X0 X3 X1) \Rightarrow ((r3_borsuk_2 \\
& X0 X1 X2 X4 X5) \Rightarrow (r3_borsuk_2 X0 X1 X2 X4 (k1_borsuk_2 X0 X1 X1 X2 (k1_borsuk_2 \\
& X0 X1 X3 X1 (k2_borsuk_2 X0 X3 X1 X6) X6) X5)))))))))) \\
& \tag{5}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_borsuk_2 X3 \\
& X0 X1 X2) \Rightarrow ((r2_borsuk_2 X0 X1 X2) \Rightarrow (r3_borsuk_2 X0 X1 X2 X3 X3)))))) \\
& \tag{6}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v2_struct_0 \\
& X0) \wedge (l1_pre_topc X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge ((\\
& m1_subset_1 X2 (u1_struct_0 X0)) \wedge ((m1_borsuk_2 X3 X0 X1 X2) \wedge (m1_borsuk_2 \\
& X4 X0 X1 X2)))))) \Rightarrow ((r3_borsuk_2 X0 X1 X2 X3 X4) \Rightarrow (r3_borsuk_2 X0 X1 \\
& X2 X4 X3)) \\
& \tag{7}
\end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (v2_pre_topc \\ & X0) \wedge (l1_pre_topc X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\ & m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow ((r1_borsuk_6 X0 X1 X2) \Rightarrow (r1_borsuk_6 \\ & X0 X2 X1)) \end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (v2_pre_topc \\ & X0) \wedge (l1_pre_topc X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\ & m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow ((r2_borsuk_2 X0 X1 X2) \Leftrightarrow (r1_borsuk_2 \\ & X0 X1 X2)) \end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (v2_pre_topc \\ & X0) \wedge (l1_pre_topc X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\ & m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow ((r1_borsuk_6 X0 X1 X2) \Leftrightarrow (r1_borsuk_2 \\ & X0 X1 X2)) \end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 \\ & X0) \wedge (v2_pre_topc X0) \wedge (l1_pre_topc X0)) \wedge ((m1_subset_1 X1 (\\ & u1_struct_0 X0)) \wedge ((m1_subset_1 X2 (u1_struct_0 X0)) \wedge (m1_borsuk_2 \\ & X3 X0 X1 X2)))) \Rightarrow (m1_borsuk_2 (k2_borsuk_2 X0 X1 X2 X3) X0 X2 X1) \end{aligned} \tag{11}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & (((\neg v2_struct_0 X0) \wedge (v2_pre_topc X0) \wedge (l1_pre_topc X0)) \wedge (\\ & (m1_subset_1 X1 (u1_struct_0 X0)) \wedge ((m1_subset_1 X2 (u1_struct_0 \\ & X0)) \wedge ((m1_subset_1 X3 (u1_struct_0 X0)) \wedge ((m1_borsuk_2 X4 X0 X1 \\ & X2) \wedge (m1_borsuk_2 X5 X0 X2 X3)))))) \Rightarrow (m1_borsuk_2 (k1_borsuk_2 \\ & X0 X1 X2 X3 X4 X5) X0 X1 X3) \end{aligned} \tag{12}$$

Theorem 1

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