

t31\_topalg\_1  
(TMZL1wo2KWR5Ek68AzUvkgZykZowyM8KUxv)

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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  $r2\_borsuk\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_borsuk\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\
& X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\
& (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\
& (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_borsuk\_2 X4 X0 X1 X2) \Rightarrow (\forall X5. \\
& (m1\_borsuk\_2 X5 X0 X1 X2) \Rightarrow (\forall X6.(m1\_borsuk\_2 X6 X0 X2 X3) \Rightarrow \\
& (\forall X7.(m1\_borsuk\_2 X7 X0 X2 X3) \Rightarrow (((r1\_borsuk\_6 X0 X1 X2) \wedge \\
& ((r1\_borsuk\_6 X0 X2 X3) \wedge (r3\_borsuk\_2 X0 X1 X2 X4 X5) \wedge (r3\_borsuk\_2 \\
& X0 X2 X3 X6 X7)))) \Rightarrow (r3\_borsuk\_2 X0 X1 X3 (k1\_borsuk\_2 X0 X1 X2 X3 X4 \\
& X6) (k1\_borsuk\_2 X0 X1 X2 X3 X5 X7)))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\
& X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\
& (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\
& (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow \\
& (\forall X5.(m1\_borsuk\_2 X5 X0 X1 X2) \Rightarrow (\forall X6.(m1\_borsuk\_2 \\
& X6 X0 X2 X3) \Rightarrow (\forall X7.(m1\_borsuk\_2 X7 X0 X3 X4) \Rightarrow (((r1\_borsuk\_6 \\
& X0 X1 X2) \wedge ((r1\_borsuk\_6 X0 X2 X3) \wedge (r1\_borsuk\_6 X0 X3 X4))) \Rightarrow (r3\_borsuk\_2 \\
& X0 X1 X4 (k1\_borsuk\_2 X0 X1 X3 X4 (k1\_borsuk\_2 X0 X1 X2 X3 X5 X6) X7) ( \\
& k1\_borsuk\_2 X0 X1 X2 X4 X5 (k1\_borsuk\_2 X0 X2 X3 X4 X6 X7)))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & (u1\_struct\_0 X0)) \Rightarrow (((r1\_borsuk\_6 X0 X1 X2) \wedge (r1\_borsuk\_6 X0 X2 \\ & X3)) \Rightarrow (r1\_borsuk\_6 X0 X1 X3)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_borsuk\_2 X3 \\ & X0 X1 X2) \Rightarrow ((r2\_borsuk\_2 X0 X1 X2) \Rightarrow (r3\_borsuk\_2 X0 X1 X2 X3 X3)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc \\ & X0) \wedge (l1\_pre\_topc X0))) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge ( \\ & m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow ((r2\_borsuk\_2 X0 X1 X2) \Leftrightarrow (r1\_borsuk\_2 \\ & X0 X1 X2)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc \\ & X0) \wedge (l1\_pre\_topc X0))) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge ( \\ & m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow ((r1\_borsuk\_6 X0 X1 X2) \Leftrightarrow (r1\_borsuk\_2 \\ & X0 X1 X2)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & (((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0))) \wedge ( \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge ((m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \wedge ((m1\_subset\_1 X3 (u1\_struct\_0 X0)) \wedge ((m1\_borsuk\_2 X4 X0 X1 \\ & X2) \wedge (m1\_borsuk\_2 X5 X0 X2 X3)))))) \Rightarrow (m1\_borsuk\_2 (k1\_borsuk\_2 \\ & X0 X1 X2 X3 X4 X5) X0 X1 X3) \end{aligned} \quad (7)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow \\ & (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (((r1\_borsuk\_6 \\ & X0 X1 X2) \wedge ((r1\_borsuk\_6 X0 X2 X3) \wedge ((r1\_borsuk\_6 X0 X3 X4) \wedge (r1\_borsuk\_6 \\ & X0 X4 X5)))) \Rightarrow (\forall X6.(m1\_borsuk\_2 X6 X0 X1 X2) \Rightarrow (\forall X7. \\ & (m1\_borsuk\_2 X7 X0 X2 X3) \Rightarrow (\forall X8.(m1\_borsuk\_2 X8 X0 X3 X4) \Rightarrow \\ & (\forall X9.(m1\_borsuk\_2 X9 X0 X4 X5) \Rightarrow (r3\_borsuk\_2 X0 X1 X5 (k1\_borsuk\_2 \\ & X0 X1 X4 X5 (k1\_borsuk\_2 X0 X1 X3 X4 (k1\_borsuk\_2 X0 X1 X2 X3 X6 X7) X8) \\ & X9) (k1\_borsuk\_2 X0 X1 X4 X5 (k1\_borsuk\_2 X0 X1 X2 X4 X6 (k1\_borsuk\_2 \\ & X0 X2 X3 X4 X7 X8)) X9)))))))))) \end{aligned}$$