

## t32\_topalg\_1

(TMaERX9Q3XpYFJERbEzhYisRZDykUbpvovf)

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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  $k1\_borsuk\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge ((v1\_borsuk\_2 \\ & X0) \wedge (l1\_pre\_topc X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_borsuk\_2 X4 \\ & X0 X1 X2) \Rightarrow (\forall X5.(m1\_borsuk\_2 X5 X0 X1 X2) \Rightarrow (\forall X6.(m1\_borsuk\_2 \\ & X6 X0 X2 X3) \Rightarrow (\forall X7.(m1\_borsuk\_2 X7 X0 X2 X3) \Rightarrow (((r4\_borsuk\_2 \\ & X0 X1 X2 X4 X5) \wedge (r4\_borsuk\_2 X0 X2 X3 X6 X7)) \Rightarrow (r4\_borsuk\_2 X0 X1 X3 \\ & (k1\_borsuk\_2 X0 X1 X2 X3 X4 X6) (k1\_borsuk\_2 X0 X1 X2 X3 X5 X7)))))))))) \\ & \tag{1} \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge ((v1\_borsuk\_2 \\ & X0) \wedge (l1\_pre\_topc X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\ & (u1\_struct\_0 X0)) \Rightarrow (\forall X5.(m1\_borsuk\_2 X5 X0 X1 X2) \Rightarrow (\forall X6. \\ & (m1\_borsuk\_2 X6 X0 X2 X3) \Rightarrow (\forall X7.(m1\_borsuk\_2 X7 X0 X3 X4) \Rightarrow \\ & (r4\_borsuk\_2 X0 X1 X4 (k1\_borsuk\_2 X0 X1 X3 X4 (k1\_borsuk\_2 X0 X1 X2 \\ & X3 X5 X6) X7) (k1\_borsuk\_2 X0 X1 X2 X4 X5 (k1\_borsuk\_2 X0 X2 X3 X4 X6 X7)))))))))) \\ & \tag{2} \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v2\_struct\_0 \\ & X0) \wedge ((v2\_pre\_topc X0) \wedge ((v1\_borsuk\_2 X0) \wedge (l1\_pre\_topc X0)))) \wedge \\ & ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge ((m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \wedge ((m1\_borsuk\_2 X3 X0 X1 X2) \wedge (m1\_borsuk\_2 X4 X0 X1 X2)))) \Rightarrow ( \\ & r4\_borsuk\_2 X0 X1 X2 X3 X3) \\ & \tag{3} \end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\
& (((\neg v2\_struct\_0 X0)\wedge(v2\_pre\_topc X0)\wedge(l1\_pre\_topc X0))\wedge \\
& (m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge((m1\_subset\_1 X2 (u1\_struct\_0 \\
& X0))\wedge((m1\_subset\_1 X3 (u1\_struct\_0 X0))\wedge((m1\_borsuk\_2 X4 X0 X1 \\
& X2)\wedge(m1\_borsuk\_2 X5 X0 X2 X3))))))\Rightarrow(m1\_borsuk\_2 (k1\_borsuk\_2 \\
& X0 X1 X2 X3 X4 X5) X0 X1 X3)
\end{aligned} \tag{4}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0)\wedge(v2\_pre\_topc X0)\wedge(v1\_borsuk\_2 \\
& X0)\wedge(l1\_pre\_topc X0))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\
& X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow(\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0))\Rightarrow(\forall X4.(m1\_subset\_1 X4 \\
& (u1\_struct\_0 X0))\Rightarrow(\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0))\Rightarrow \\
& (\forall X6.(m1\_borsuk\_2 X6 X0 X1 X2)\Rightarrow(\forall X7.(m1\_borsuk\_2 \\
& X7 X0 X2 X3)\Rightarrow(\forall X8.(m1\_borsuk\_2 X8 X0 X3 X4)\Rightarrow(\forall X9.( \\
& m1\_borsuk\_2 X9 X0 X4 X5)\Rightarrow(r4\_borsuk\_2 X0 X1 X5 (k1\_borsuk\_2 X0 X1 \\
& X4 X5 (k1\_borsuk\_2 X0 X1 X3 X4 (k1\_borsuk\_2 X0 X1 X2 X3 X6 X7) X8) X9) \\
& (k1\_borsuk\_2 X0 X1 X4 X5 (k1\_borsuk\_2 X0 X1 X2 X4 X6 (k1\_borsuk\_2 X0 \\
& X2 X3 X4 X7 X8) X9))))))))))
\end{aligned}$$