

t33\_topalg\_1  
(TMSGWuTdSrEcrogkLFwaSN1fqefC4sjnUXi)

October 27, 2020

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  $m1\_borsuk\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r3\_borsuk\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_borsuk\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

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

Assume the following.

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

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.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\
& X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\
& (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\
& (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow \\
& (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (((r1\_borsuk\_6 \\
& X0 X1 X2) \wedge ((r1\_borsuk\_6 X0 X2 X3) \wedge ((r1\_borsuk\_6 X0 X3 X4) \wedge (r1\_borsuk\_6 \\
& X0 X4 X5)))))) \Rightarrow (\forall X6.(m1\_borsuk\_2 X6 X0 X1 X2) \Rightarrow (\forall X7. \\
& (m1\_borsuk\_2 X7 X0 X2 X3) \Rightarrow (\forall X8.(m1\_borsuk\_2 X8 X0 X3 X4) \Rightarrow \\
& (\forall X9.(m1\_borsuk\_2 X9 X0 X4 X5) \Rightarrow (r3\_borsuk\_2 X0 X1 X5 (k1\_borsuk\_2 \\
& X0 X1 X4 X5 (k1\_borsuk\_2 X0 X1 X3 X4 (k1\_borsuk\_2 X0 X1 X2 X3 X6 X7) X8) \\
& X9) (k1\_borsuk\_2 X0 X1 X4 X5 (k1\_borsuk\_2 X0 X1 X2 X4 X6 (k1\_borsuk\_2 \\
& X0 X2 X3 X4 X7 X8) X9))))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
& (((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0))) \wedge ( \\
& (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge ((m1\_subset\_1 X2 (u1\_struct\_0 \\
& X0)) \wedge ((m1\_subset\_1 X3 (u1\_struct\_0 X0)) \wedge ((m1\_borsuk\_2 X4 X0 X1 \\
& X2) \wedge (m1\_borsuk\_2 X5 X0 X2 X3)))))) \Rightarrow (m1\_borsuk\_2 (k1\_borsuk\_2 \\
& X0 X1 X2 X3 X4 X5) X0 X1 X3)
\end{aligned} \tag{5}$$

**Theorem 1**

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