

t21\_borsuk\_3 (TMKkF-  
PEFu57CC1iA9AQTtjrNRpZbzDuiUuS)

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Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $m1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_borsuk\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1. \\ & (m1\_pre\_topc X1 X0) \Rightarrow (\forall X2.(m1\_pre\_topc X2 X1) \Rightarrow (m1\_pre\_topc \\ & X2 X0))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1. \\ & ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc X1)) \Rightarrow (\forall X2.(m1\_pre\_topc \\ & X2 X0) \Rightarrow (m1\_pre\_topc (k2\_borsuk\_1 X1 X2) (k2\_borsuk\_1 X1 X0)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1. \\ & ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc X1)) \Rightarrow (\forall X2.(m1\_pre\_topc \\ & X2 X0) \Rightarrow (m1\_pre\_topc (k2\_borsuk\_1 X2 X1) (k2\_borsuk\_1 X0 X1)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1\_pre\_topc X0) \Rightarrow (\forall X1.(m1\_pre\_topc X1 X0) \Rightarrow \\ & (l1\_pre\_topc X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \wedge \\ & ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc X1))) \Rightarrow ((v1\_pre\_topc (k2\_borsuk\_1 \\ & X0 X1)) \wedge ((v2\_pre\_topc (k2\_borsuk\_1 X0 X1)) \wedge (l1\_pre\_topc (k2\_borsuk\_1 \\ & X0 X1)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1. \\ & (m1\_pre\_topc X1 X0) \Rightarrow (v2\_pre\_topc X1)) \end{aligned} \quad (6)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0))\Rightarrow(\forall X1. \\ & ((v2\_pre\_topc\ X1)\wedge(l1\_pre\_topc\ X1))\Rightarrow(\forall X2.(m1\_pre\_topc \\ & X2\ X0)\Rightarrow(\forall X3.(m1\_pre\_topc\ X3\ X1)\Rightarrow(m1\_pre\_topc\ (k2\_borsuk\_1 \\ & X2\ X3)\ (k2\_borsuk\_1\ X0\ X1)))))) \end{aligned}$$