

## t5\_topalg\_4

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_group\_1 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_group\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_topalg\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_group\_7 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_funct\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \Rightarrow (\forall X1. \\
 & ((\neg v2\_struct\_0 X1) \wedge (l3\_algstr\_0 X1)) \Rightarrow (\forall X2. ((\neg v2\_struct\_0 \\
 & X2) \wedge (l3\_algstr\_0 X2)) \Rightarrow (\forall X3. ((\neg v2\_struct\_0 X3) \wedge (l3\_algstr\_0 \\
 & X3)) \Rightarrow (\forall X4. ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 \\
 & X0) (u1\_struct\_0 X2)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
 & (u1\_struct\_0 X0) (u1\_struct\_0 X2)))))) \Rightarrow (\forall X5. ((v1\_funct\_1 \\
 & X5) \wedge ((v1\_funct\_2 X5 (u1\_struct\_0 X1) (u1\_struct\_0 X3)) \wedge (m1\_subset\_1 \\
 & X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X3)))))) \Rightarrow \\
 & (((v2\_funct\_2 X4 (u1\_struct\_0 X2)) \wedge (v2\_funct\_2 X5 (u1\_struct\_0 \\
 & X3))) \Rightarrow (v2\_funct\_2 (k1\_topalg\_4 X0 X1 X2 X3 X4 X5) (u1\_struct\_0 ( \\
 & k2\_group\_7 (k2\_tarski np\_1 np\_2) (k10\_finseq\_1 X2 X3))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2\_struct\_0 X1) \wedge (l3\_algstr\_0 X1)) \Rightarrow (\forall X2.((\neg v2\_struct\_0 \\
& X2) \wedge (l3\_algstr\_0 X2)) \Rightarrow (\forall X3.((\neg v2\_struct\_0 X3) \wedge (l3\_algstr\_0 \\
& X3)) \Rightarrow (\forall X4.((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X2)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X0) (u1\_struct\_0 X2)))))) \Rightarrow (\forall X5.((v1\_funct\_1 \\
& X5) \wedge ((v1\_funct\_2 X5 (u1\_struct\_0 X1) (u1\_struct\_0 X3)) \wedge (m1\_subset\_1 \\
& X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X3)))))) \Rightarrow \\
& (((v2\_funct\_1 X4) \wedge (v2\_funct\_1 X5)) \Rightarrow (v2\_funct\_1 (k1\_topalg\_4 \\
& X0 X1 X2 X3 X4 X5))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
& (((\neg v2\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \wedge (((\neg v2\_struct\_0 X1) \wedge \\
& (l3\_algstr\_0 X1)) \wedge (((\neg v2\_struct\_0 X2) \wedge (l3\_algstr\_0 X2)) \wedge (( \\
& (\neg v2\_struct\_0 X3) \wedge (l3\_algstr\_0 X3)) \wedge (((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 \\
& X4 (u1\_struct\_0 X0) (u1\_struct\_0 X2)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X2)))))) \wedge ((v1\_funct\_1 \\
& X5) \wedge ((v1\_funct\_2 X5 (u1\_struct\_0 X1) (u1\_struct\_0 X3)) \wedge (m1\_subset\_1 \\
& X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X3))))))))) \Rightarrow \\
& ((v1\_funct\_1 (k1\_topalg\_4 X0 X1 X2 X3 X4 X5)) \wedge ((v1\_funct\_2 (k1\_topalg\_4 \\
& X0 X1 X2 X3 X4 X5) (u1\_struct\_0 (k2\_group\_7 (k2\_tarski np\_1 np\_2) \\
& (k10\_finseq\_1 X0 X1))) (u1\_struct\_0 (k2\_group\_7 (k2\_tarski np\_1 \\
& np\_2) (k10\_finseq\_1 X2 X3)))) \wedge (m1\_subset\_1 (k1\_topalg\_4 X0 X1 \\
& X2 X3 X4 X5) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 (k2\_group\_7 \\
& (k2\_tarski np\_1 np\_2) (k10\_finseq\_1 X0 X1))) (u1\_struct\_0 (k2\_group\_7 \\
& (k2\_tarski np\_1 np\_2) (k10\_finseq\_1 X2 X3))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1))) \Rightarrow (((v1\_funct\_1 X2) \wedge ((v2\_funct\_1 X2) \wedge (v2\_funct\_2 \\
& X2 X1))) \Rightarrow ((v1\_funct\_1 X2) \wedge (v3\_funct\_2 X2 X0 X1)))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1))) \Rightarrow (((v1\_funct\_1 X2) \wedge (v3\_funct\_2 X2 X0 X1)) \Rightarrow \\
& ((v1\_funct\_1 X2) \wedge ((v2\_funct\_1 X2) \wedge (v2\_funct\_2 X2 X1)))
\end{aligned} \tag{5}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ & X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 \\ & X1) \wedge ((v3\_group\_1 X1) \wedge (l3\_algstr\_0 X1)))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 \\ & X2) \wedge ((v2\_group\_1 X2) \wedge ((v3\_group\_1 X2) \wedge (l3\_algstr\_0 X2)))) \Rightarrow \\ & (\forall X3.((\neg v2\_struct\_0 X3) \wedge ((v2\_group\_1 X3) \wedge ((v3\_group\_1 \\ & X3) \wedge (l3\_algstr\_0 X3)))) \Rightarrow (\forall X4.((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 \\ & X4 (u1\_struct\_0 X0) (u1\_struct\_0 X2)) \wedge ((v1\_group\_6 X4 X0 X2) \wedge ( \\ & m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X2)))))) \Rightarrow (\forall X5.((v1\_funct\_1 X5) \wedge ((v1\_funct\_2 X5 (u1\_struct\_0 \\ & X1) (u1\_struct\_0 X3)) \wedge ((v1\_group\_6 X5 X1 X3) \wedge (m1\_subset\_1 X5 ( \\ & k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X3)))))) \Rightarrow \\ & (((v3\_funct\_2 X4 (u1\_struct\_0 X0) (u1\_struct\_0 X2)) \wedge (v3\_funct\_2 \\ & X5 (u1\_struct\_0 X1) (u1\_struct\_0 X3))) \Rightarrow (v3\_funct\_2 (k1\_topalg\_4 \\ & X0 X1 X2 X3 X4 X5) (u1\_struct\_0 (k2\_group\_7 (k2\_tarski np\_1 np\_2) \\ & (k10\_finseq\_1 X0 X1)) (u1\_struct\_0 (k2\_group\_7 (k2\_tarski np\_1 \\ & np\_2) (k10\_finseq\_1 X2 X3)))))))))) \end{aligned}$$