

## t14\_algstr\_4

(TMNoy9qtXTMxVxna1L2b49m4eEvyL44JDP5)

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Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k9\_algstr\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_algstr\_4 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v15\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v2\_algstr\_4 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_algstr\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_realset1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \neg(v1\_xboole\_0 X0) \wedge ((X0 \neq X1) \wedge (v1\_xboole\_0 X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \neg(X0 \in X1) \wedge (v1\_xboole\_0 X1) \quad (2)$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. r1\_tarski X0 X0 \quad (5)$$

Assume the following.

$$\exists X0. (v1\_xboole\_0 X0) \wedge (v1\_xreal\_0 X0) \quad (6)$$

Assume the following.

$$\forall X0.\exists X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\wedge(v1\_xboole\_0 X1) \quad (7)$$

Assume the following.

$$\exists X0.(l3\_algstr\_0 X0)\wedge(v2\_struct\_0 X0) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_struct\_0 X0))\Rightarrow(\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.((v2\_struct\_0 X0)\wedge(l1\_struct\_0 X0))\Rightarrow(v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3\_algstr\_0 X0)\Rightarrow & ((v1\_funct\_1 (u2\_algstr\_0 X0))\wedge \\ & ((v1\_funct\_2 (u2\_algstr\_0 X0) (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ & u1\_struct\_0 X0)) (u1\_struct\_0 X0))\wedge(m1\_subset\_1 (u2\_algstr\_0 \\ & X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ & u1\_struct\_0 X0)) (u1\_struct\_0 X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0)\Rightarrow(\forall X1.(m1\_algstr\_4 X1 X0)\Rightarrow (l3\_algstr\_0 X1)) \quad (12)$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0)\Rightarrow(l1\_struct\_0 X0) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((l3\_algstr\_0 X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))\Rightarrow((v15\_algstr\_0 (k9\_algstr\_4 X0 X1))\wedge(m1\_algstr\_4 (k9\_algstr\_4 X0 X1) X0)) \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((l3\_algstr\_0 X0)\wedge((v2\_algstr\_4 X1 X0)\wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))\Rightarrow((v1\_funct\_1 \\ & (k8\_algstr\_4 X0 X1))\wedge((v1\_funct\_2 (k8\_algstr\_4 X0 X1) (k2\_zfmisc\_1 \\ & X1 X1) X1)\wedge(m1\_subset\_1 (k8\_algstr\_4 X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X1 X1) X1)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0) \Rightarrow (\forall X1.(l3\_algstr\_0 X1) \Rightarrow ((m1\_algstr\_4 X1 X0) \Leftrightarrow ((r1\_tarski (u1\_struct\_0 X1) (u1\_struct\_0 X0)) \wedge (u2\_algstr\_0 X1 = k1\_realset1 (u2\_algstr\_0 X0) (u1\_struct\_0 X1)))))) \quad (16)$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\forall X2.((v15\_algstr\_0 X2) \wedge (m1\_algstr\_4 X2 X0)) \Rightarrow ((X2 = k9\_algstr\_4 X0 X1) \Leftrightarrow ((r1\_tarski X1 (u1\_struct\_0 X2)) \wedge (\forall X3.((v15\_algstr\_0 X3) \wedge (m1\_algstr\_4 X3 X0)) \Rightarrow ((r1\_tarski X1 (u1\_struct\_0 X3)) \Rightarrow (m1\_algstr\_4 X2 X3))))))) \quad (17)$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0) \Rightarrow (\forall X1.((v2\_algstr\_4 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow (k8\_algstr\_4 X0 X1 = k1\_realset1 (u2\_algstr\_0 X0) X1)) \quad (18)$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow ((v2\_algstr\_4 X1 X0) \Leftrightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (((X2 \in X1) \wedge (X3 \in X1)) \Rightarrow (k6\_algstr\_0 X0 X2 X3 \in X1)))))) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_xboole\_0 X0) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X0))) \Rightarrow (v1\_xboole\_0 X2)) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_xboole\_0 X0) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_xboole\_0 X2)) \quad (21)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (v1\_xboole\_0 X1)) \quad (22)$$

**Theorem 1**

$$\forall X0.(l3\_algstr\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow ((v1\_xboole\_0 X1) \Leftrightarrow (v2\_struct\_0 (k9\_algstr\_4 X0 X1))))$$