

# l13\_algstr\_3

(TMS393Q;Z1KSZ3mUqNwGh2ucfnFGe5KFLoB)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_algstr\_3 : \iota$  be given. Let  $k1\_algstr\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  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  $k3\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $g1\_algstr\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_algstr\_3 : \iota \Rightarrow o$  be given. Let  $l4\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l3\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_3 : \iota \Rightarrow o$  be given. Let  $k2\_algstr\_3 : \iota$  be given. Let  $u2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_membered : \iota \Rightarrow o$  be given. Let  $u3\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_algstr\_3 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k3\_xcmplx\_0 np\_1 X0 = X0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (\forall X1.(v1\_xcmplx\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xcmplx\_0 X2) \Rightarrow ((k2\_xcmplx\_0 X0 X1 = k2\_xcmplx\_0 X2 X1) \Rightarrow (X0 = \\ & X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 k3\_algstr\_3)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 k3\_algstr\_3)) \Rightarrow (\forall X2.(m1\_subset\_1 \\ & X2 (u1\_struct\_0 k3\_algstr\_3)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 k1\_numbers) \Rightarrow \\ & (\forall X4.(m1\_subset\_1 X4 k1\_numbers) \Rightarrow (\forall X5.(m1\_subset\_1 \\ & X5 k1\_numbers) \Rightarrow (((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = X5))) \Rightarrow (k1\_algstr\_3 \\ & k3\_algstr\_3 X0 X1 X2 = k7\_real\_1 (k8\_real\_1 X3 X4) X5)))))) \end{aligned} \quad (3)$$

Assume the following.

$$m1\_subset\_1 \ k1\_xboole\_0 \ k4\_ordinal1 \quad (4)$$

Assume the following.

$$\begin{aligned} & ((v2\_xreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 \ X0 \ k1\_numbers) \wedge (v1\_xreal\_0 \ X1)) \Rightarrow (k8\_real\_1 \ X0 \ X1 = k3\_xcmplx\_0 \ X0 \ X1) \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 \ X0 \ k1\_numbers) \wedge (v1\_xreal\_0 \ X1)) \Rightarrow (k7\_real\_1 \ X0 \ X1 = k2\_xcmplx\_0 \ X0 \ X1) \quad (7)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (8)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_subset\_1 \ X0 \ (u1\_struct\_0 \ k3\_algstr\_3)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 \ X1 \ (u1\_struct\_0 \ k3\_algstr\_3)) \Rightarrow (\forall X2. (m1\_subset\_1 \\ & X2 \ (u1\_struct\_0 \ k3\_algstr\_3)) \Rightarrow (\exists X3. (m1\_subset\_1 \ X3 \ (u1\_struct\_0 \\ & k3\_algstr\_3)) \wedge (k1\_algstr\_3 \ k3\_algstr\_3 \ X0 \ X1 \ X3 = X2)))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_subset\_1 \ X0 \ (u1\_struct\_0 \ k3\_algstr\_3)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 \ X1 \ (u1\_struct\_0 \ k3\_algstr\_3)) \Rightarrow (k1\_algstr\_3 \ k3\_algstr\_3 \\ & (k4\_struct\_0 \ k3\_algstr\_3) \ X0 \ X1 = X1)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((m1\_subset\_1 \ X1 \\ & X0) \wedge ((m1\_subset\_1 \ X2 \ X0) \wedge ((v1\_funct\_1 \ X3) \wedge ((v1\_funct\_2 \ X3 \ (k3\_zfmisc\_1 \\ & X0 \ X0 \ X0) \ X0) \wedge (m1\_subset\_1 \ X3 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k3\_zfmisc\_1 \\ & X0 \ X0 \ X0) \ X0)))))) \Rightarrow (\forall X4. \forall X5. \forall X6. \forall X7. \\ & (g1\_algstr\_3 \ X0 \ X1 \ X2 \ X3 = g1\_algstr\_3 \ X4 \ X5 \ X6 \ X7) \Rightarrow ((X0 = X4) \wedge ((X1 = \\ & X5) \wedge ((X2 = X6) \wedge (X3 = X7)))))) \end{aligned} \quad (12)$$

Assume the following.

$$v3\_membered\ k1\_numbers \quad (13)$$

Assume the following.

$$(\neg v2\_struct\_0\ k3\_algstr\_3) \wedge (v1\_algstr\_3\ k3\_algstr\_3) \quad (14)$$

Assume the following.

$$\forall X0.(l4\_struct\_0\ X0) \Rightarrow ((l2\_struct\_0\ X0) \wedge (l3\_struct\_0\ X0)) \quad (15)$$

Assume the following.

$$\forall X0.(l1\_algstr\_3\ X0) \Rightarrow (l4\_struct\_0\ X0) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1\ X0\ k1\_numbers) \wedge (v1\_xreal\_0\ X1)) \Rightarrow (m1\_subset\_1\ (k8\_real\_1\ X0\ X1)\ k1\_numbers) \quad (17)$$

Assume the following.

$$m1\_subset\_1\ k5\_numbers\ (k1\_zfmisc\_1\ k1\_numbers) \quad (18)$$

Assume the following.

$$(v1\_algstr\_3\ k3\_algstr\_3) \wedge (l1\_algstr\_3\ k3\_algstr\_3) \quad (19)$$

Assume the following.

$$(v1\_funct\_1\ k2\_algstr\_3) \wedge ((v1\_funct\_2\ k2\_algstr\_3\ (k3\_zfmisc\_1\ k1\_numbers\ k1\_numbers\ k1\_numbers)\ k1\_numbers) \wedge (m1\_subset\_1\ k2\_algstr\_3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k3\_zfmisc\_1\ k1\_numbers\ k1\_numbers\ k1\_numbers))))) \quad (20)$$

Assume the following.

$$\forall X0.(l2\_struct\_0\ X0) \Rightarrow (k4\_struct\_0\ X0 = u2\_struct\_0\ X0) \quad (21)$$

Assume the following.

$$k3\_algstr\_3 = g1\_algstr\_3\ k1\_numbers\ k6\_numbers\ np\_1\ k2\_algstr\_3 \quad (22)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0\ X0) \wedge (v1\_xcmplx\_0\ X1)) \Rightarrow (k2\_xcmplx\_0\ X0\ X1 = k2\_xcmplx\_0\ X1\ X0) \quad (23)$$

Assume the following.

$$\forall X0.(v3\_membered\ X0) \Rightarrow (v1\_membered\ X0) \quad (24)$$

Assume the following.

$$\forall X0.(v3\_membered\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\Rightarrow(v3\_membered\ X1)) \quad (25)$$

Assume the following.

$$\forall X0.(v3\_membered\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ X0)\Rightarrow(v1\_xreal\_0\ X1)) \quad (26)$$

Assume the following.

$$\forall X0.(v1\_membered\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ X0)\Rightarrow(v1\_xcmplx\_0\ X1)) \quad (27)$$

Assume the following.

$$\forall X0.(l1\_algstr\_3\ X0)\Rightarrow((v1\_algstr\_3\ X0)\Rightarrow(X0 = g1\_algstr\_3\ (u1\_struct\_0\ X0)\ (u2\_struct\_0\ X0)\ (u3\_struct\_0\ X0)\ (u1\_algstr\_3\ X0))) \quad (28)$$

**Theorem 1**

$$\forall X0.(m1\_subset\_1\ X0\ (u1\_struct\_0\ k3\_algstr\_3))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ k3\_algstr\_3))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ k3\_algstr\_3))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ k3\_algstr\_3))\Rightarrow((k1\_algstr\_3\ k3\_algstr\_3\ X0\ X1\ X2 = k1\_algstr\_3\ k3\_algstr\_3\ X0\ X1\ X3)\Rightarrow(X2 = X3))))))$$