

## l10\_algstr\_3

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

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k3\_xcmplx\_0 X0 \ k6\_numbers = k6\_numbers) \quad (1)$$

Assume the following.

$$m1\_subset\_1 \ k1\_xboole\_0 \ k4\_ordinal1 \quad (2)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k2\_xcmplx\_0 X0 \ k6\_numbers = X0) \quad (3)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers)\wedge(v1\_xreal\_0 X1))\Rightarrow(k8\_real\_1 X0 X1 = k3\_xcmplx\_0 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers)\wedge(v1\_xreal\_0 X1))\Rightarrow(k7\_real\_1 X0 X1 = k2\_xcmplx\_0 X0 X1) \quad (6)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (7)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1 X1 \\ & X0)\wedge((m1\_subset\_1 X2 X0)\wedge((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 (k3\_zfmisc\_1 \\ & X0 X0 X0) X0)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k3\_zfmisc\_1 \\ & X0 X0 X0) X0))))))\Rightarrow(\forall X4.\forall X5.\forall X6.\forall X7. \\ & (g1\_algstr\_3 X0 X1 X2 X3 = g1\_algstr\_3 X4 X5 X6 X7)\Rightarrow((X0 = X4)\wedge((X1 = \\ & X5)\wedge((X2 = X6)\wedge(X3 = X7)))))) \end{aligned} \quad (9)$$

Assume the following.

$$v3\_membered k1\_numbers \quad (10)$$

Assume the following.

$$(\neg v2\_struct\_0 k3\_algstr\_3)\wedge(v1\_algstr\_3 k3\_algstr\_3) \quad (11)$$

Assume the following.

$$\forall X0.(l4\_struct\_0 X0)\Rightarrow((l2\_struct\_0 X0)\wedge(l3\_struct\_0 X0)) \quad (12)$$

Assume the following.

$$\forall X0.(l1\_algstr\_3 X0)\Rightarrow(l4\_struct\_0 X0) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers)\wedge(v1\_xreal\_0 X1))\Rightarrow(m1\_subset\_1 (k8\_real\_1 X0 X1) k1\_numbers) \quad (14)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (15)$$

Assume the following.

$$(v1\_algstr\_3 \ k3\_algstr\_3) \wedge (l1\_algstr\_3 \ k3\_algstr\_3) \quad (16)$$

Assume the following.

$$(v1\_funct\_1 \ k2\_algstr\_3) \wedge ((v1\_funct\_2 \ k2\_algstr\_3 \ (k3\_zfmisc\_1 \ k1\_numbers \ k1\_numbers \ k1\_numbers) \ k1\_numbers) \wedge (m1\_subset\_1 \ k2\_algstr\_3 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k3\_zfmisc\_1 \ k1\_numbers \ k1\_numbers \ k1\_numbers) \ k1\_numbers) \ k1\_numbers) \ k1\_numbers))) \quad (17)$$

Assume the following.

$$\forall X0. (l2\_struct\_0 \ X0) \Rightarrow (k4\_struct\_0 \ X0 = u2\_struct\_0 \ X0) \quad (18)$$

Assume the following.

$$k3\_algstr\_3 = g1\_algstr\_3 \ k1\_numbers \ k6\_numbers \ np\_1 \ k2\_algstr\_3 \quad (19)$$

Assume the following.

$$\begin{aligned} \forall X0. ((v1\_funct\_1 \ X0) \wedge ((v1\_funct\_2 \ X0 \ (k3\_zfmisc\_1 \ k1\_numbers \ k1\_numbers \ k1\_numbers) \ k1\_numbers) \wedge (m1\_subset\_1 \ X0 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k3\_zfmisc\_1 \ k1\_numbers \ k1\_numbers \ k1\_numbers) \ k1\_numbers) \ k1\_numbers) \ k1\_numbers) \ k1\_numbers) \ k1\_numbers) \Rightarrow ((X0 = k2\_algstr\_3) \Leftrightarrow (\forall X1. (m1\_subset\_1 \ X1 \ k1\_numbers) \Rightarrow (\forall X2. (m1\_subset\_1 \ X2 \ k1\_numbers) \Rightarrow (\forall X3. (m1\_subset\_1 \ X3 \ k1\_numbers) \Rightarrow (k2\_multop\_1 \ k1\_numbers \ k1\_numbers \ k1\_numbers \ k1\_numbers \ X0 \ X1 \ X2 \ X3 = k7\_real\_1 \ (k8\_real\_1 \ X1 \ X2) \ X3)))))) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2\_struct\_0 \ X0) \wedge (l1\_algstr\_3 \ X0)) \Rightarrow (\forall X1. (m1\_subset\_1 \ X1 \ (u1\_struct\_0 \ X0)) \Rightarrow (\forall X2. (m1\_subset\_1 \ X2 \ (u1\_struct\_0 \ X0)) \Rightarrow (\forall X3. (m1\_subset\_1 \ X3 \ (u1\_struct\_0 \ X0)) \Rightarrow (k1\_algstr\_3 \ X0 \ X1 \ X2 \ X3 = k2\_multop\_1 \ (u1\_struct\_0 \ X0) \ (u1\_struct\_0 \ X0) \ (u1\_struct\_0 \ X0) \ (u1\_struct\_0 \ X0) \ (u1\_algstr\_3 \ X0) \ X1 \ X2 \ X3)))) \end{aligned} \quad (21)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_xcmplx\_0 \ X0) \wedge (v1\_xcmplx\_0 \ X1)) \Rightarrow (k2\_xcmplx\_0 \ X0 \ X1 = k2\_xcmplx\_0 \ X1 \ X0) \quad (22)$$

Assume the following.

$$\forall X0. (v3\_membered \ X0) \Rightarrow (v1\_membered \ X0) \quad (23)$$

Assume the following.

$$\forall X0. (v3\_membered \ X0) \Rightarrow (\forall X1. (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ X0)) \Rightarrow (v3\_membered \ X1)) \quad (24)$$

Assume the following.

$$\forall X0.(v3\_membered\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ X0)\Rightarrow (v1\_xreal\_0\ X1)) \quad (25)$$

Assume the following.

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

Assume the following.

$$\forall X0.(l1\_algstr\_3\ X0)\Rightarrow((v1\_algstr\_3\ X0)\Rightarrow(X0 = g1\_algstr\_3 (u1\_struct\_0\ X0)\ (u2\_struct\_0\ X0)\ (u3\_struct\_0\ X0)\ (u1\_algstr\_3\ X0))) \quad (27)$$

**Theorem 1**

$$\forall X0.(m1\_subset\_1\ X0\ (u1\_struct\_0\ k3\_algstr\_3))\Rightarrow(\forall X1. (m1\_subset\_1\ X1\ (u1\_struct\_0\ k3\_algstr\_3))\Rightarrow(k1\_algstr\_3\ k3\_algstr\_3\ X0\ (k4\_struct\_0\ k3\_algstr\_3)\ X1 = X1))$$