

l41\_algstr\_1  
(TMcZ8QqJCSymqezpRf7dpPmYEsADLxwUHpM)

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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  $k3\_algstr\_1 : \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k11\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $k5\_numbers : \iota$  be given. Let  $k4\_ordinal1 : \iota$  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  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $g5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v29\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l4\_algstr\_0 : \iota \Rightarrow o$  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  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k35\_binop\_2 : \iota$  be given. Let  $u2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $u3\_struct\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 k1\_numbers) \Rightarrow (\neg(X0 \neq k6\_numbers) \wedge (\forall X2.(m1\_subset\_1 \\ X2 k1\_numbers) \Rightarrow (X1 \neq k11\_binop\_2 X0 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} ((v2\_xxreal\_0 np\_1) \wedge (m2\_subset\_1 np\_1 k1\_numbers k5\_numbers)) \wedge \\ ((m1\_subset\_1 np\_1 k5\_numbers) \wedge (m1\_subset\_1 np\_1 k1\_numbers)) \end{aligned} \quad (2)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1 X1) \wedge \\ ((v1\_funct\_2 X1 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))))) \wedge ((m1\_subset\_1 X2 X0) \wedge \\ (m1\_subset\_1 X3 X0))) \Rightarrow (k5\_binop\_1 X0 X1 X2 X3 = k1\_binop\_1 X1 X2 X3) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1 X1)\wedge \\ & ((v1\_funct\_2 X1 (k2\_zfmisc\_1 X0 X0) X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0))))\wedge((m1\_subset\_1 X2 X0)\wedge \\ & (m1\_subset\_1 X3 X0)))\Rightarrow(\forall X4.\forall X5.\forall X6.\forall X7. \\ & (g5\_algstr\_0 X0 X1 X2 X3 = g5\_algstr\_0 X4 X5 X6 X7)\Rightarrow((X0 = X4)\wedge((X1 = \\ & X5)\wedge((X2 = X6)\wedge(X3 = X7)))))) \end{aligned} \quad (5)$$

Assume the following.

$$(v29\_algstr\_0 k3\_algstr\_1)\wedge(v4\_vectsp\_1 k3\_algstr\_1) \quad (6)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1)\wedge(v3\_ordinal1 k4\_ordinal1) \quad (7)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((\neg v1\_xboole\_0 X1)\wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))))\Rightarrow(\forall X2.(m2\_subset\_1 \\ & X2 X0 X1)\Rightarrow(m1\_subset\_1 X2 X0)) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.(l5\_algstr\_0 X0)\Rightarrow((l4\_algstr\_0 X0)\wedge(l4\_struct\_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.(l4\_struct\_0 X0)\Rightarrow((l2\_struct\_0 X0)\wedge(l3\_struct\_0 X0)) \quad (11)$$

Assume the following.

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

Assume the following.

$$m2\_subset\_1 k6\_numbers k1\_numbers k5\_numbers \quad (13)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (14)$$

Assume the following.

$$(v29\_algstr\_0 k3\_algstr\_1)\wedge(l5\_algstr\_0 k3\_algstr\_1) \quad (15)$$

Assume the following.

$$(v1\_funct\_1 \ k35\_binop\_2) \wedge ((v1\_funct\_2 \ k35\_binop\_2 \ (k2\_zfmisc\_1 \ k1\_numbers \ k1\_numbers) \ k1\_numbers) \wedge (m1\_subset\_1 \ k35\_binop\_2 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k1\_numbers \ k1\_numbers) \ k1\_numbers)))) \quad (16)$$

Assume the following.

$$k3\_algstr\_1 = g5\_algstr\_0 \ k1\_numbers \ k35\_binop\_2 \ k6\_numbers \ np\_1 \quad (17)$$

Assume the following.

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

Assume the following.

$$\forall X0. (l3\_algstr\_0 \ X0) \Rightarrow (\forall X1. (m1\_subset\_1 \ X1 \ (u1\_struct\_0 \ X0)) \Rightarrow (\forall X2. (m1\_subset\_1 \ X2 \ (u1\_struct\_0 \ X0)) \Rightarrow (k6\_algstr\_0 \ X0 \ X1 \ X2 = k5\_binop\_1 \ (u1\_struct\_0 \ X0) \ (u2\_algstr\_0 \ X0) \ X1 \ X2))) \quad (19)$$

Assume the following.

$$\forall X0. ((v1\_funct\_1 \ X0) \wedge ((v1\_funct\_2 \ X0 \ (k2\_zfmisc\_1 \ k1\_numbers \ k1\_numbers) \ k1\_numbers) \wedge (m1\_subset\_1 \ X0 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k1\_numbers \ k1\_numbers) \ k1\_numbers)))))) \Rightarrow ((X0 = k35\_binop\_2) \Leftrightarrow (\forall X1. (v1\_xreal\_0 \ X1) \Rightarrow (\forall X2. (v1\_xreal\_0 \ X2) \Rightarrow (k1\_binop\_1 \ X0 \ X1 \ X2 = k11\_binop\_2 \ X1 \ X2)))) \quad (20)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 \ X0 \ k1\_numbers) \Rightarrow (v1\_xreal\_0 \ X0) \quad (21)$$

Assume the following.

$$\forall X0. (l5\_algstr\_0 \ X0) \Rightarrow ((v29\_algstr\_0 \ X0) \Rightarrow (X0 = g5\_algstr\_0 \ (u1\_struct\_0 \ X0) \ (u2\_algstr\_0 \ X0) \ (u2\_struct\_0 \ X0) \ (u3\_struct\_0 \ X0))) \quad (22)$$

### Theorem 1

$$\forall X0. (m1\_subset\_1 \ X0 \ (u1\_struct\_0 \ k3\_algstr\_1)) \Rightarrow (\forall X1. (m1\_subset\_1 \ X1 \ (u1\_struct\_0 \ k3\_algstr\_1)) \Rightarrow (\neg (X0 \neq k4\_struct\_0 \ k3\_algstr\_1) \wedge (\forall X2. (m1\_subset\_1 \ X2 \ (u1\_struct\_0 \ k3\_algstr\_1)) \Rightarrow (k6\_algstr\_0 \ k3\_algstr\_1 \ X0 \ X2 \neq X1))))$$