

t17\_algseq\_1  
(TMLAUN97ciGfogreq7gCCpJS5LtThR6nSSB)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  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  $k5\_numbers : \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_algseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_algseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_algseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $r1\_algseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\ & (l2\_struct\_0 X1)) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\ & X2 k5\_numbers (u1\_struct\_0 X1)) \wedge ((v1\_algseq\_1 X2 X1) \wedge (m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k5\_numbers (u1\_struct\_0 X1)))))) \Rightarrow \\ & ((r1\_xxreal\_0 (k1\_algseq\_1 X1 X2) X0) \Rightarrow (k1\_funct\_1 X2 X0 = k4\_struct\_0 \\ & X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1.(m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \tag{2}$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (r1\_xxreal\_0 k6\_numbers X0) \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (((k9\_xtuple\_0 X0 = k9\_xtuple\_0 \\ X1) \wedge (\forall X2.(X2 \in k9\_xtuple\_0 X0) \Rightarrow (k1\_funct\_1 X0 X2 = k1\_funct\_1 \\ X1 X2))) \Rightarrow (X0 = X1))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (5)$$

Assume the following.

$$m1\_subset\_1 k1\_xboole\_0 k4\_ordinal1 \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\forall X1. \\ ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers (u1\_struct\_0 X0)) \wedge \\ (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 \\ X0)))))) \Rightarrow (\neg (\exists X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \wedge (\forall X3. \\ (v7\_ordinal1 X3) \Rightarrow (k1\_funct\_1 X1 X3 = X2))) \wedge (\forall X2.(m1\_subset\_1 \\ X2 (u1\_struct\_0 X0) \Rightarrow (k10\_xtuple\_0 X1 \neq k6\_domain\_1 (u1\_struct\_0 \\ X0) X2)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ \neg v2\_struct\_0 X1) \wedge (l1\_struct\_0 X1)) \Rightarrow (\forall X2.(m1\_subset\_1 \\ X2 (u1\_struct\_0 X1)) \Rightarrow (((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers \\ (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ k5\_numbers (u1\_struct\_0 X1)))))) \Leftrightarrow ((k9\_xtuple\_0 X0 = k5\_numbers) \wedge \\ (\forall X3.(X3 \in k5\_numbers) \Rightarrow (m1\_subset\_1 (k1\_funct\_1 X0 X3) \\ (u1\_struct\_0 X1))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow ( \\ r1\_xxreal\_0 X0 X0) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. \forall X3. (((v1\_funct\_1 X2) \wedge \\ ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ X0 X1)))))) \wedge ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X0 X1) \wedge (m1\_subset\_1 \\ X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow ((r2\_funct\_2 X0 X1 X2 \\ X3) \Leftrightarrow (X2 = X3)) \end{aligned} \quad (10)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X1 X0))\Rightarrow (k6\_domain\_1 X0 X1 = k1\_tarski X1) \quad (12)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (13)$$

Assume the following.

$$\begin{aligned} &\forall X0.((\neg v2\_struct\_0 X0)\wedge(l2\_struct\_0 X0))\Rightarrow(\forall X1. \\ &((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 k5\_numbers (u1\_struct\_0 X0))\wedge \\ &((v1\_algseq\_1 X1 X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ &k5\_numbers (u1\_struct\_0 X0))))))\Rightarrow((r2\_funct\_2 k5\_numbers ( \\ &u1\_struct\_0 X0) X1 (k3\_algseq\_1 X0 (k4\_struct\_0 X0))\Rightarrow(k1\_algseq\_1 \\ &X0 X1 = k6\_numbers))) \end{aligned} \quad (14)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1)\wedge(v3\_ordinal1 k4\_ordinal1) \quad (15)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_struct\_0 X0))\Rightarrow(\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (16)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0)\Rightarrow(l1\_struct\_0 X0) \quad (17)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0)\Rightarrow(m1\_subset\_1 (k4\_struct\_0 X0) (u1\_struct\_0 X0)) \quad (18)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge(l2\_struct\_0 X0))\wedge \\ &(m1\_subset\_1 X1 (u1\_struct\_0 X0)))\Rightarrow((v1\_funct\_1 (k3\_algseq\_1 \\ &X0 X1))\wedge((v1\_funct\_2 (k3\_algseq\_1 X0 X1) k5\_numbers (u1\_struct\_0 \\ &X0))\wedge((v1\_algseq\_1 (k3\_algseq\_1 X0 X1) X0)\wedge(m1\_subset\_1 (k3\_algseq\_1 \\ &X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 X0)))))) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge (l2\_struct\_0 X0)) \wedge \\ & ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers (u1\_struct\_0 X0)) \wedge \\ & ((v1\_algseq\_1 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & k5\_numbers (u1\_struct\_0 X0))))))) \Rightarrow (m1\_subset\_1 (k1\_algseq\_1 \\ & X0 X1) k5\_numbers) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. (X1 = \\ & k10\_xtuple\_0 X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow (\exists X3. (X3 \in k9\_xtuple\_0 \\ & X0) \wedge (X2 = k1\_funct\_1 X0 X3)))) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l2\_struct\_0 X0)) \Rightarrow (\forall X1. \\ & ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers (u1\_struct\_0 X0)) \wedge \\ & ((v1\_algseq\_1 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & k5\_numbers (u1\_struct\_0 X0))))))) \Rightarrow (\forall X2. (m1\_subset\_1 \\ & X2 k5\_numbers) \Rightarrow ((X2 = k1\_algseq\_1 X0 X1) \Leftrightarrow ((r1\_algseq\_1 X0 X1 X2) \wedge \\ & (\forall X3. (v7\_ordinal1 X3) \Rightarrow ((r1\_algseq\_1 X0 X1 X3) \Rightarrow (r1\_xreal\_0 \\ & X2 X3)))))) \end{aligned} \quad (22)$$

Assume the following.

$$k1\_xboole\_0 = the (\lambda X0 : \iota. v1\_xboole\_0 X0) \quad (23)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l2\_struct\_0 X0)) \Rightarrow (\forall X1. \\ & ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers (u1\_struct\_0 X0)) \wedge \\ & ((v1\_algseq\_1 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & k5\_numbers (u1\_struct\_0 X0))))))) \Rightarrow (\forall X2. (v7\_ordinal1 \\ & X2) \Rightarrow ((r1\_algseq\_1 X0 X1 X2) \Leftrightarrow (\forall X3. (v7\_ordinal1 X3) \Rightarrow ((r1\_xreal\_0 \\ & X2 X3) \Rightarrow (k1\_funct\_1 X1 X3 = k4\_struct\_0 X0)))))) \end{aligned} \quad (24)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (X1 = k1\_tarski X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow \\ & (X2 = X0)) \end{aligned} \quad (25)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l2\_struct\_0 X0)) \Rightarrow (\forall X1. \\ & ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers (u1\_struct\_0 X0)) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 \\ & X0)))))) \Rightarrow ((v1\_algseq\_1 X1 X0) \Leftrightarrow (\exists X2. (v7\_ordinal1 X2) \wedge \\ & (\forall X3. (v7\_ordinal1 X3) \Rightarrow ((r1\_xreal\_0 X2 X3) \Rightarrow (k1\_funct\_1 \\ & X1 X3 = k4\_struct\_0 X0)))))) \end{aligned} \quad (26)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1)\Rightarrow(v7\_ordinal1 X0) \quad (27)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(v1\_xxreal\_0 X0) \quad (28)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(v1\_xreal\_0 X0) \quad (29)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v1\_relat\_1 X2) \quad (30)$$

**Theorem 1**

$$\begin{aligned} &\forall X0.((\neg v2\_struct\_0 X0)\wedge(l2\_struct\_0 X0))\Rightarrow(\forall X1. \\ &((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 k5\_numbers (u1\_struct\_0 X0))\wedge \\ &((v1\_algseq\_1 X1 X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ &k5\_numbers (u1\_struct\_0 X0))))))\Rightarrow((r2\_funct\_2 k5\_numbers ( \\ &u1\_struct\_0 X0) X1 (k3\_algseq\_1 X0 (k4\_struct\_0 X0)))\Leftrightarrow(k10\_xtuple\_0 \\ &X1 = k1\_tarski (k4\_struct\_0 X0)))) \end{aligned}$$