

## t6\_ami\_4

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_ami\_3 : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v5\_funct\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_compos\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_ami\_4 : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_4 : \iota$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v1\_setfam\_1 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_compos\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k3\_compos\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k2\_ami\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_ami\_3 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k6\_ami\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_3 : \iota$  be given. Let  $k9\_ami\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. \neg (X0 \in X1) \wedge ((m1\_subset\_1 X1 (k1\_zfmisc\_1 X2)) \wedge (v1\_xboole\_0 X2)) \quad (1)$$

Assume the following.

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

Assume the following.

$$\begin{aligned}
& \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\
& (m2\_subset\_1 X1 k1\_numbers k5\_numbers) \Rightarrow (\forall X2. ((\neg v1\_xboole\_0 \\
& X2) \wedge (\neg v1\_setfam\_1 X2)) \Rightarrow ((r1\_xxreal\_0 X0 X1) \Rightarrow (\forall X3. ((\neg \\
& v2\_struct\_0 X3) \wedge ((v2\_memstr\_0 X3 X2) \wedge ((v3\_memstr\_0 X3 X2) \wedge (( \\
& v3\_extpro\_1 X3 X2) \wedge (l1\_extpro\_1 X3 X2)))))) \Rightarrow (\forall X4. ((v1\_relat\_1 \\
& X4) \wedge ((v4\_relat\_1 X4 k5\_numbers) \wedge ((v5\_relat\_1 X4 (u1\_compos\_1 \\
& X3)) \wedge (v1\_funct\_1 X4)))) \Rightarrow (\forall X5. ((v1\_relat\_1 X5) \wedge ((v4\_relat\_1 \\
& X5 (u1\_struct\_0 X3)) \wedge ((v1\_funct\_1 X5) \wedge ((v5\_funct\_1 X5 (k2\_memstr\_0 \\
& X2 X3)) \wedge (v1\_partfun1 X5 (u1\_struct\_0 X3)))))) \Rightarrow ((r1\_compos\_1 \\
& X3 X4 (k5\_memstr\_0 X2 X3 (k5\_extpro\_1 X2 X3 X4 X5 X0))) \Rightarrow (k5\_extpro\_1 \\
& X2 X3 X4 X5 X1 = k5\_extpro\_1 X2 X3 X4 X5 X0))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow (r1\_xxreal\_0 X0 (k2\_xcmplx\_0 X0 X1))) \tag{4}$$

Assume the following.

$$\begin{aligned}
& ((v2\_xxreal\_0 np\_2) \wedge (m2\_subset\_1 np\_2 k1\_numbers k5\_numbers)) \wedge \\
& ((m1\_subset\_1 np\_2 k5\_numbers) \wedge (m1\_subset\_1 np\_2 k1\_numbers))
\end{aligned} \tag{5}$$

Assume the following.

$$\neg v1\_xboole\_0 np\_2 \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 \\
& X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1))
\end{aligned} \tag{7}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k5\_numbers) \wedge (v7\_ordinal1 X1)) \Rightarrow (k2\_nat\_1 X0 X1 = k2\_xcmplx\_0 X0 X1) \tag{9}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v5\_relat\_1 \\
& X0 (u1\_compos\_1 k1\_ami\_3)) \wedge ((v1\_funct\_1 X0) \wedge (v1\_partfun1 X0 \\
& k5\_numbers)))) \Rightarrow ((r1\_tarski k1\_ami\_4 X0) \Rightarrow ((k3\_compos\_1 k1\_ami\_3 \\
& X0 k6\_numbers = k2\_ami\_3 (k10\_ami\_3 np\_2) (k10\_ami\_3 np\_1)) \wedge \\
& ((k3\_compos\_1 k1\_ami\_3 X0 np\_1 = k6\_ami\_3 (k10\_ami\_3 k6\_numbers) \\
& (k10\_ami\_3 np\_1)) \wedge ((k3\_compos\_1 k1\_ami\_3 X0 np\_2 = k2\_ami\_3 \\
& (k10\_ami\_3 k6\_numbers) (k10\_ami\_3 np\_2)) \wedge ((k3\_compos\_1 k1\_ami\_3 \\
& X0 np\_3 = k9\_ami\_3 k6\_numbers (k10\_ami\_3 np\_1)) \wedge (r1\_compos\_1 \\
& k1\_ami\_3 X0 np\_4))))))
\end{aligned} \tag{10}$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1) \wedge (v3\_ordinal1 k4\_ordinal1) \quad (11)$$

Assume the following.

$$(v1\_extpro\_1 k1\_ami\_3 np\_2) \wedge (v3\_extpro\_1 k1\_ami\_3 np\_2) \quad (12)$$

Assume the following.

$$(v3\_memstr\_0 k1\_ami\_3 np\_2) \wedge (v1\_extpro\_1 k1\_ami\_3 np\_2) \quad (13)$$

Assume the following.

$$(v2\_memstr\_0 k1\_ami\_3 np\_2) \wedge (v1\_extpro\_1 k1\_ami\_3 np\_2) \quad (14)$$

Assume the following.

$$(\neg v2\_struct\_0 k1\_ami\_3) \wedge (v1\_extpro\_1 k1\_ami\_3 np\_2) \quad (15)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (16)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 X0 k5\_numbers) \wedge (v7\_ordinal1 X1)) \Rightarrow (m2\_subset\_1 (k2\_nat\_1 X0 X1) k1\_numbers k5\_numbers) \quad (17)$$

Assume the following.

$$(v1\_extpro\_1 k1\_ami\_3 np\_2) \wedge (l1\_extpro\_1 k1\_ami\_3 np\_2) \quad (18)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (19)$$

Assume the following.

$$\forall X0. ((\neg v1\_xboole\_0 X0) \wedge (v7\_ordinal1 X0)) \Rightarrow ((\neg v1\_xboole\_0 X0) \wedge ((v7\_ordinal1 X0) \wedge (\neg v1\_setfam\_1 X0))) \quad (20)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 (u1\_struct\_0 k1\_ami\_3)) \wedge \\ & ((v1\_funct\_1 X0) \wedge ((v5\_funct\_1 X0 (k2\_memstr\_0 np\_2 k1\_ami\_3)) \wedge \\ & (v1\_partfun1 X0 (u1\_struct\_0 k1\_ami\_3)))))) \Rightarrow (\forall X1. ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 k5\_numbers) \wedge ((v5\_relat\_1 X1 (u1\_compos\_1 k1\_ami\_3)) \wedge ((v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 k5\_numbers)))))) \Rightarrow \\ & ((r1\_tarSKI k1\_ami\_4 X1) \Rightarrow (\forall X2. (m1\_subset\_1 X2 k5\_numbers) \Rightarrow \\ & (\forall X3. (m1\_subset\_1 X3 k5\_numbers) \Rightarrow ((k5\_memstr\_0 np\_2 k1\_ami\_3 (k5\_extpro\_1 np\_2 k1\_ami\_3 X1 X0 X2) = np\_4) \Rightarrow (k5\_extpro\_1 np\_2 k1\_ami\_3 X1 X0 X2)))))) \end{aligned}$$