

# t32\_bcialg\_6 (TMX- URF3Mo6WSEBeZhBHwQQbtvwAEDerMgAo)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v3\_bcialg\_1 : \iota \Rightarrow o$  be given. Let  $v4\_bcialg\_1 : \iota \Rightarrow o$  be given. Let  $v5\_bcialg\_1 : \iota \Rightarrow o$  be given. Let  $v7\_bcialg\_1 : \iota \Rightarrow o$  be given. Let  $l2\_bcialg\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_bcialg\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_bcialg\_6 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_bcialg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_bcialg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_bcialg\_6 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k3\_bcialg\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_bcialg\_1 : \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $np\_0 : \iota$  be given. Let  $k4\_ordinal1 : \iota$  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.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge (l2\_bcialg\_1 X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (k3\_bcialg\_6 X0 np\_1 X1 = X1)) \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge (l2\_bcialg\_1 X0)))))) \Rightarrow (\forall X1. (m2\_subset\_1 X1 (u1\_struct\_0 X0) (k5\_bcialg\_1 X0)) \Rightarrow (\forall X2. (m2\_subset\_1 X2 (u1\_struct\_0 X0) (k7\_bcialg\_1 X0 X1)) \Rightarrow (\forall X3. (m2\_subset\_1 X3 (u1\_struct\_0 X0) (k7\_bcialg\_1 X0 X1)) \Rightarrow (k1\_bcialg\_1 X0 X2 X3 \in k4\_bcialg\_1 X0)))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 X1)\Rightarrow((v1\_xboole\_0 X1)\vee (X0 \in X1)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1)\Rightarrow(m1\_subset\_1 X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow((\neg r1\_xxreal\_0 np\_1 X0)\Rightarrow(X0 = k6\_numbers)) \quad (7)$$

Assume the following.

$$((v2\_xxreal\_0 np\_1)\wedge(m2\_subset\_1 np\_1 k1\_numbers k5\_numbers))\wedge ((m1\_subset\_1 np\_1 k5\_numbers)\wedge(m1\_subset\_1 np\_1 k1\_numbers)) \quad (8)$$

Assume the following.

$$v1\_xboole\_0 np\_0 \quad (9)$$

Assume the following.

$$\neg r1\_xxreal\_0 np\_1 np\_0 \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((\neg v1\_xboole\_0 X1)\wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))))\Rightarrow(\forall X2.(m2\_subset\_1 X2 X0 X1)\Leftrightarrow(m1\_subset\_1 X2 X1)) \quad (11)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (12)$$

Assume the following.

$$\forall X0.\exists X1.m1\_subset\_1 X1 X0 \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v3\_bcialg\_1 X0)\wedge ((v4\_bcialg\_1 X0)\wedge((v5\_bcialg\_1 X0)\wedge((v7\_bcialg\_1 X0)\wedge(l2\_bcialg\_1 X0))))))\wedge(m1\_subset\_1 X1 (k5\_bcialg\_1 X0)))\Rightarrow((\neg v1\_xboole\_0 (k7\_bcialg\_1 X0 X1))\wedge(m1\_subset\_1 (k7\_bcialg\_1 X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \quad (14)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v3\_bcialg\_1 X0)\wedge((v4\_bcialg\_1 X0)\wedge((v5\_bcialg\_1 X0)\wedge((v7\_bcialg\_1 X0)\wedge(l2\_bcialg\_1 X0))))))\Rightarrow((\neg v1\_xboole\_0 (k5\_bcialg\_1 X0))\wedge(m1\_subset\_1 (k5\_bcialg\_1 X0) (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 \\ X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge (l2\_bcialg\_1 X0)))))) \Rightarrow \\ ((\neg v1\_xboole\_0 (k4\_bcialg\_1 X0)) \wedge (m1\_subset\_1 (k4\_bcialg\_1 \\ X0) (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 \\ X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge (l2\_bcialg\_1 X0)))))) \Rightarrow \\ (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow ((v1\_bcialg\_6 \\ X1 X0) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k5\_numbers) \Rightarrow ((X2 = k4\_bcialg\_6 \\ X0 X1) \Leftrightarrow ((k3\_bcialg\_6 X0 X2 X1 \in k4\_bcialg\_1 X0) \wedge ((X2 \neq k6\_numbers) \wedge \\ (\forall X3.(m1\_subset\_1 X3 k5\_numbers) \Rightarrow ((k3\_bcialg\_6 X0 X3 X1 \in \\ k4\_bcialg\_1 X0) \Rightarrow ((X3 = k6\_numbers) \vee (r1\_xreal\_0 X2 X3)))))))))) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (18)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (v7\_ordinal1 X0) \quad (19)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 \\ X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge (l2\_bcialg\_1 X0)))))) \Rightarrow \\ (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 \\ X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m2\_subset\_1 X3 (u1\_struct\_0 \\ X0) (k5\_bcialg\_1 X0)) \Rightarrow (((v1\_bcialg\_6 (k1\_bcialg\_1 X0 X1 X2) X0) \wedge \\ ((X1 \in k7\_bcialg\_1 X0 X3) \wedge (X2 \in k7\_bcialg\_1 X0 X3))) \Rightarrow (k4\_bcialg\_6 \\ X0 (k1\_bcialg\_1 X0 X1 X2) = np\_1)))))) \end{aligned}$$