

t25\_bcialg\_3 (TMbPkTXmnhDbtJK-  
wvgJDGUXJZdai3igp4PB)

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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  $v8\_bcialg\_1 : \iota \Rightarrow o$  be given. Let  $l2\_bcialg\_1 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_bcialg\_3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_bcialg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (1)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge ((v8\_bcialg\_1 X0) \wedge (l2\_bcialg\_1 X0))))))) \Rightarrow (\forall X1. (m1\_bcialg\_3 X1 X0) \Rightarrow ((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \quad (2)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l2\_bcialg\_1 X0)) \Rightarrow ((v5\_bcialg\_1 X0) \Leftrightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (k1\_bcialg\_1 X0 X1 X1 = k4\_struct\_0 X0))) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge ((v8\_bcialg\_1 X0) \wedge (l2\_bcialg\_1 X0))))))) \Rightarrow (\forall X1. ((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow ((m1\_bcialg\_3 X1 X0) \Leftrightarrow ((k4\_struct\_0 X0 \in X1) \wedge (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4. (m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow ((k1\_bcialg\_1 X0 (k1\_bcialg\_1 X0 X2 X3) X4 \in X1) \wedge (X4 \in X1)) \Rightarrow (k1\_bcialg\_1 X0 X2 (k1\_bcialg\_1 X0 X3 (k1\_bcialg\_1 X0 X3 X2)) \in X1)))))))))) \end{aligned} \quad (4)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 \\ & X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge ((v8\_bcialg\_1 X0) \wedge \\ & (l2\_bcialg\_1 X0))))))) \Rightarrow (\forall X1.((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 \\ & X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow ((m1\_bcialg\_3 X1 X0) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & (u1\_struct\_0 X0)) \Rightarrow ((k1\_bcialg\_1 X0 X2 X3 \in X1) \Rightarrow (k1\_bcialg\_1 X0 \\ & X2 (k1\_bcialg\_1 X0 X3 (k1\_bcialg\_1 X0 X3 X2)) \in X1)))))) \end{aligned}$$