

## t41\_bcialg\_5

(TMbH5Pwx9WuaCTXPCDJ5m8wo8wS3tj2gqni)

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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  $v1\_xboole\_0 : \iota \Rightarrow o$  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  $k4\_bcialg\_1 : \iota \Rightarrow \iota$  be given. Let  $v19\_bcialg\_1 : \iota \Rightarrow o$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_bcialg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_bcialg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_bcialg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 \\ & X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge (l2\_bcialg\_1 X0)))))) \Rightarrow \\ & ((v19\_bcialg\_1 X0) \Leftrightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow ((k2\_bcialg\_1 X0 X1 = k4\_struct\_0 X0) \Rightarrow (X1 = k4\_struct\_0 X0)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 \\ & X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge (l2\_bcialg\_1 X0)))))) \Rightarrow \\ & ((v19\_bcialg\_1 X0) \Rightarrow (k4\_bcialg\_1 X0 = k1\_tarski (k4\_struct\_0 X0))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 \\ & X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge (l2\_bcialg\_1 X0)))))) \Rightarrow \\ & (k4\_struct\_0 X0 \in k4\_bcialg\_1 X0) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l2\_bcialg\_1 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (k2\_bcialg\_1 X0 X1 = k1\_bcialg\_1 \\ & X0 (k4\_struct\_0 X0) X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (X1 = k1\_tarski X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow \\ & (X2 = X0)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 \\ & X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge (l2\_bcialg\_1 X0)))))) \Rightarrow \\ & (k4\_bcialg\_1 X0 = ReplSep (toset (\lambda X1 : \iota.m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0))) (\lambda X1 : \iota.r1\_bcialg\_1 X0 (k4\_struct\_0 X0) X1) (\lambda X1 : \\ & \iota.X1)) \end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l2\_bcialg\_1 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\ & (u1\_struct\_0 X0)) \Rightarrow ((r1\_bcialg\_1 X0 X1 X2) \Leftrightarrow (k1\_bcialg\_1 X0 X1 X2 = \\ & k4\_struct\_0 X0)))) \end{aligned} \tag{7}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 \\ & X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge (l2\_bcialg\_1 X0)))))) \Rightarrow \\ & (\forall X1.((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0)))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge ((v3\_bcialg\_1 \\ & X2) \wedge ((v4\_bcialg\_1 X2) \wedge ((v5\_bcialg\_1 X2) \wedge ((v7\_bcialg\_1 X2) \wedge \\ & (l2\_bcialg\_1 X2)))))) \Rightarrow ((X1 = k4\_bcialg\_1 X2) \Rightarrow (((\neg v2\_struct\_0 \\ & X2) \wedge ((v3\_bcialg\_1 X2) \wedge ((v4\_bcialg\_1 X2) \wedge ((v5\_bcialg\_1 X2) \wedge \\ & ((v7\_bcialg\_1 X2) \wedge ((v19\_bcialg\_1 X2) \wedge (l2\_bcialg\_1 X2)))))) \Leftrightarrow \\ & (X1 = k1\_tarski (k4\_struct\_0 X2)))))) \end{aligned}$$