

t7\_bcialg\_3  
(TMMMxjx7XBVtNsYggSttCsZx1inJXm3ti6j)

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

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 \\ & X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge ((v8\_bcialg\_1 X0) \wedge \\ & (l2\_bcialg\_1 X0)))))) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge \\ & ((v4\_bcialg\_1 X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge ((v8\_bcialg\_1 \\ & X0) \wedge (v1\_bcialg\_3 X0) \wedge (l2\_bcialg\_1 X0)))))) \Leftrightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 \\ & (u1\_struct\_0 X0)) \Rightarrow (k1\_bcialg\_1 X0 X1 X2 = k1\_bcialg\_1 X0 X1 (k1\_bcialg\_1 \\ & X0 X2 (k1\_bcialg\_1 X0 X2 X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 \\ & X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge (l2\_bcialg\_1 X0)))))) \Rightarrow \\ & (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (k1\_bcialg\_1 X0 \\ & X1 (k4\_struct\_0 X0) = X1)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l2\_bcialg\_1 X0)) \Rightarrow ((v5\_bcialg\_1 \\ & X0) \Leftrightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (k1\_bcialg\_1 \\ & X0 X1 X1 = k4\_struct\_0 X0))) \end{aligned} \tag{3}$$

**Theorem 1**

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