

# t20\_bcialg\_1 (TMZWrUrrF- sMh8wUhqmU1eukeLhYwopwzL5Z)

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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  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_bcialg\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_bcialg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_bcialg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $l1\_bcialg\_1 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \neg (X0 \in X1) \wedge (v1\_xboole\_0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 \\ & X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge (l2\_bcialg\_1 X0)))))) \Rightarrow \\ & (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 \\ & X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (u1\_struct\_0 \\ & X0)) \Rightarrow ((r1\_bcialg\_1 X0 X1 X2) \Rightarrow ((r1\_bcialg\_1 X0 (k1\_bcialg\_1 X0 \\ & X1 X3) (k1\_bcialg\_1 X0 X2 X3)) \wedge (r1\_bcialg\_1 X0 (k1\_bcialg\_1 X0 X3 \\ & X2) (k1\_bcialg\_1 X0 X3 X1))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 \\ & X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge (l2\_bcialg\_1 X0)))))) \Rightarrow \\ & (k4\_struct\_0 X0 \in k4\_bcialg\_1 X0) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((\neg v1\_xboole\_0 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))))\Rightarrow(\forall X2.(m2\_subset\_1 X2 X0 X1)\Leftrightarrow(m1\_subset\_1 X2 X1)) \quad (6)$$

Assume the following.

$$\forall X0.(l2\_bcialg\_1 X0)\Rightarrow((l1\_bcialg\_1 X0)\wedge(l2\_struct\_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v3\_bcialg\_1 X0)\wedge((v4\_bcialg\_1 X0)\wedge((v5\_bcialg\_1 X0)\wedge((v7\_bcialg\_1 X0)\wedge(l2\_bcialg\_1 X0))))))\Rightarrow((\neg v1\_xboole\_0 (k4\_bcialg\_1 X0))\wedge(m1\_subset\_1 (k4\_bcialg\_1 X0) (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((l1\_bcialg\_1 X0)\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X2 (u1\_struct\_0 X0))))\Rightarrow(m1\_subset\_1 (k1\_bcialg\_1 X0 X1 X2) (u1\_struct\_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v3\_bcialg\_1 X0)\wedge((v4\_bcialg\_1 X0)\wedge((v5\_bcialg\_1 X0)\wedge((v7\_bcialg\_1 X0)\wedge(l2\_bcialg\_1 X0))))))\Rightarrow(k4\_bcialg\_1 X0 = ReplSep (toset (\lambda X1 : \iota.m1\_subset\_1 X1 (u1\_struct\_0 X0))) (\lambda X1 : \iota.r1\_bcialg\_1 X0 (k4\_struct\_0 X0) X1) (\lambda X1 : \iota.X1)) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l2\_bcialg\_1 X0))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow((r1\_bcialg\_1 X0 X1 X2)\Leftrightarrow(k1\_bcialg\_1 X0 X1 X2 = k4\_struct\_0 X0)))) \quad (11)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\Rightarrow(v1\_xboole\_0 X1)) \quad (12)$$

**Theorem 1**

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