

## t54\_bciideal

(TMQv15GRT1rkpnnVxq2z6jb854sorYw2aaa)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v3\_bciideal\_1 : \iota \Rightarrow o$  be given. Let  $v4\_bciideal\_1 : \iota \Rightarrow o$  be given. Let  $v5\_bciideal\_1 : \iota \Rightarrow o$  be given. Let  $v7\_bciideal\_1 : \iota \Rightarrow o$  be given. Let  $v8\_bciideal\_1 : \iota \Rightarrow o$  be given. Let  $l2\_bciideal\_1 : \iota \Rightarrow o$  be given. Let  $m2\_bciideal\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m4\_bciideal : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_bciideal\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_bciideal\_1 X0) \wedge ((v4\_bciideal\_1 \\ X0) \wedge ((v5\_bciideal\_1 X0) \wedge ((v7\_bciideal\_1 X0) \wedge (l2\_bciideal\_1 X0)))))) \Rightarrow \\ (\forall X1. (m2\_bciideal\_1 X1 X0) \Rightarrow ((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 \\ X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_bciideal\_1 X0) \wedge ((v4\_bciideal\_1 \\ X0) \wedge ((v5\_bciideal\_1 X0) \wedge ((v7\_bciideal\_1 X0) \wedge ((v8\_bciideal\_1 X0) \wedge \\ (l2\_bciideal\_1 X0)))))))) \Rightarrow (\forall X1. ((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 \\ X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow ((m4\_bciideal X1 X0) \Leftrightarrow ((k4\_struct\_0 \\ X0 \in X1) \wedge (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\ (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4. (m1\_subset\_1 X4 \\ (u1\_struct\_0 X0)) \Rightarrow (((k1\_bciideal\_1 X0 (k1\_bciideal\_1 X0 X2 X3) X4 \in \\ X1) \wedge (k1\_bciideal\_1 X0 X3 X4 \in X1)) \Rightarrow (k1\_bciideal\_1 X0 X2 X4 \in X1)))))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 \\
& X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge (l2\_bcialg\_1 X0)))))) \Rightarrow \\
& (\forall X1.((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
& (u1\_struct\_0 X0)))) \Rightarrow ((m2\_bcialg\_1 X1 X0) \Leftrightarrow ((k4\_struct\_0 X0 \in X1) \wedge \\
& (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 \\
& X3 (u1\_struct\_0 X0)) \Rightarrow (((k1\_bcialg\_1 X0 X2 X3 \in X1) \wedge (X3 \in X1)) \Rightarrow (X2 \in \\
& X1)))))))
\end{aligned} \tag{4}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_bcialg\_1 X0) \wedge ((v4\_bcialg\_1 \\
& X0) \wedge ((v5\_bcialg\_1 X0) \wedge ((v7\_bcialg\_1 X0) \wedge ((v8\_bcialg\_1 X0) \wedge \\
& (l2\_bcialg\_1 X0)))))) \Rightarrow (\forall X1.(m2\_bcialg\_1 X1 X0) \Rightarrow ((m4\_bciideal \\
& X1 X0) \Leftrightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\
& (u1\_struct\_0 X0)) \Rightarrow (((k1\_bcialg\_1 X0 (k1\_bcialg\_1 X0 X2 X3) X4 \in \\
& X1) \wedge (k1\_bcialg\_1 X0 X3 X4 \in X1)) \Rightarrow (k1\_bcialg\_1 X0 X2 X4 \in X1)))))))
\end{aligned}$$