

## t84\_abcmiz\_1

(TMZuBtWWm4zjnwgMop7oLDTnZNxDfr6mmQz)

October 27, 2020

Let  $v1\_instalg1 : \iota \Rightarrow o$  be given. Let  $v1\_abcmiz\_1 : \iota \Rightarrow o$  be given. Let  $v3\_abcmiz\_1 : \iota \Rightarrow o$  be given. Let  $l1\_msualg\_1 : \iota \Rightarrow o$  be given. Let  $m3\_abcmiz\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v8\_abcmiz\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_abcmiz\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k13\_abcmiz\_1 : \iota \Rightarrow \iota$  be given. Let  $k43\_abcmiz\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k41\_abcmiz\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_card\_3 : \iota \Rightarrow \iota$  be given. Let  $u3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_msafree3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k28\_abcmiz\_1 : \iota \Rightarrow \iota$  be given. Let  $k42\_abcmiz\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v1\_instalg1 X0) \wedge ((v1\_abcmiz\_1 X0) \wedge ((v3\_abcmiz\_1 \\
 & X0) \wedge (l1\_msualg\_1 X0)))) \Rightarrow (\forall X1.(m3\_abcmiz\_1 X1 X0) \Rightarrow (\forall X2. \\
 & ((v8\_abcmiz\_1 X2 X0) \wedge (m1\_abcmiz\_1 X2 X0 (k13\_abcmiz\_1 X0)))) \Rightarrow ( \\
 & (k41\_abcmiz\_1 X0 (k43\_abcmiz\_1 X0 X1 X2) = k2\_xboole\_0 (k6\_domain\_1 \\
 & (k3\_card\_3 (u3\_msualg\_1 X0 (k1\_msafree3 X0 (k28\_abcmiz\_1 X0)))) \\
 & X2) (k41\_abcmiz\_1 X0 X1)) \wedge (k42\_abcmiz\_1 X0 (k43\_abcmiz\_1 X0 X1 \\
 & X2) = k42\_abcmiz\_1 X0 X1))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. k2\_xboole\_0 (k2\_xboole\_0 X0 X1) X2 = k2\_xboole\_0 X0 (k2\_xboole\_0 X1 X2) \tag{2}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. (((v1\_instalg1 X0) \wedge ((v1\_abcmiz\_1 \\
 & X0) \wedge ((v3\_abcmiz\_1 X0) \wedge (l1\_msualg\_1 X0)))) \wedge ((m3\_abcmiz\_1 X1 \\
 & X0) \wedge ((v8\_abcmiz\_1 X2 X0) \wedge (m1\_abcmiz\_1 X2 X0 (k13\_abcmiz\_1 X0)))))) \Rightarrow \\
 & (m3\_abcmiz\_1 (k43\_abcmiz\_1 X0 X1 X2) X0)
 \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_instalg1\ X0) \wedge ((v1\_abcmiz\_1\ X0) \wedge ((v3\_abcmiz\_1 \\
& X0) \wedge (l1\_msualg\_1\ X0)))) \Rightarrow (\forall X1.(m3\_abcmiz\_1\ X1\ X0) \Rightarrow (\forall X2. \\
& ((v8\_abcmiz\_1\ X2\ X0) \wedge (m1\_abcmiz\_1\ X2\ X0\ (k13\_abcmiz\_1\ X0)))) \Rightarrow ( \\
& k43\_abcmiz\_1\ X0\ X1\ X2 = k4\_tarski\ (k2\_xboole\_0\ (k6\_domain\_1\ (k3\_card\_3 \\
& (u3\_msualg\_1\ X0\ (k1\_msafree3\ X0\ (k28\_abcmiz\_1\ X0))))\ X2)\ (k41\_abcmiz\_1 \\
& X0\ X1))\ (k42\_abcmiz\_1\ X0\ X1)))
\end{aligned} \tag{4}$$

Assume the following.

$$\forall X0. \forall X1. k2\_xboole\_0\ X0\ X1 = k2\_xboole\_0\ X1\ X0 \tag{5}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v1\_instalg1\ X0) \wedge ((v1\_abcmiz\_1\ X0) \wedge ((v3\_abcmiz\_1 \\
& X0) \wedge (l1\_msualg\_1\ X0)))) \Rightarrow (\forall X1.(m3\_abcmiz\_1\ X1\ X0) \Rightarrow (\forall X2. \\
& ((v8\_abcmiz\_1\ X2\ X0) \wedge (m1\_abcmiz\_1\ X2\ X0\ (k13\_abcmiz\_1\ X0)))) \Rightarrow ( \\
& \forall X3.((v8\_abcmiz\_1\ X3\ X0) \wedge (m1\_abcmiz\_1\ X3\ X0\ (k13\_abcmiz\_1 \\
& X0)))) \Rightarrow (k43\_abcmiz\_1\ X0\ (k43\_abcmiz\_1\ X0\ X1\ X3)\ X2 = k43\_abcmiz\_1 \\
& X0\ (k43\_abcmiz\_1\ X0\ X1\ X2)\ X3)))
\end{aligned}$$