t83_abcmiz_1 (TMU6RSeNmWywREKS6fcGwrX2SDQExoUG2pc)

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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 $m1\_abcmiz\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k13\_abcmiz\_1 : \iota \Rightarrow \iota$ be given. Let $k43\_abcmiz\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k41\_abcmiz\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k2\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Assume the following.

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

Assume the following.

$$\forall X0.((v1\_instalg1\ X0) \wedge ((v1\_abcmiz\_1\ X0) \wedge ((v3\_abcmiz\_1\ X0) \wedge (l1\_msualg\_1\ X0)))) \Rightarrow (\forall X1.(m3\_abcmiz\_1\ X1\ X0) \Rightarrow (\forall X2.(m3\_abcmiz\_1\ X2\ X0) \Rightarrow (((k41\_abcmiz\_1\ X0\ X1 = k41\_abcmiz\_1\ X0\ X2) \wedge (k42\_abcmiz\_1\ X0\ X1 = k42\_abcmiz\_1\ X0\ X2)) \Rightarrow (X1 = X2)))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0\ X0\ (k2\_xboole\_0\ X0\ X1) = k2\_xboole\_0\ X0\ X1 \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_instalg1\ X0) \wedge ((v1\_abcmiz\_1\ X0) \wedge ((v3\_abcmiz\_1\ X0) \wedge (l1\_msualg\_1\ X0)))) \wedge (m3\_abcmiz\_1\ X1\ X0)) \Rightarrow (k42\_abcmiz\_1\ X0\ X1 = k2\_xtuple\_0\ X1) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_instalg1\ X0)\wedge((v1\_abcmiz\_1\ X0)\wedge((v3\_abcmiz\_1\ X0)\wedge(l1\_msualg\_1\ X0))))\wedge((m3\_abcmiz\_1\ X1\ X0)\wedge((v8\_abcmiz\_1\ X2\ X0)\wedge(m1\_abcmiz\_1\ X2\ X0\ (k13\_abcmiz\_1\ X0)))))\Rightarrow(m3\_abcmiz\_1\ (k43\_abcmiz\_1\ X0\ X1\ X2)\ X0) \tag{5}$$

Theorem 1

$$\forall X0.((v1\_instalg1\ X0)\wedge((v1\_abcmiz\_1\ X0)\wedge((v3\_abcmiz\_1\ X0)\wedge(l1\_msualg\_1\ X0))))\Rightarrow(\forall X1.(m3\_abcmiz\_1\ X1\ X0)\Rightarrow(\forall X2.((v8\_abcmiz\_1\ X2\ X0)\wedge(m1\_abcmiz\_1\ X2\ X0\ (k13\_abcmiz\_1\ X0)))\Rightarrow(k43\_abcmiz\_1\ X0\ (k43\_abcmiz\_1\ X0\ X1\ X2)\ X2 = k43\_abcmiz\_1\ X0\ X1\ X2)))$$