t31_gfacirc1 (TML-BoWdF1Ldsx8hfNzZbnnZa2FSY1UWMVgq)

October 27, 2020

Let $k3\_msafree2 : \iota \Rightarrow \iota$ be given. Let $k13\_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_tarski : \iota \Rightarrow \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k14\_twoscomp : \iota$ be given. Let $k12\_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_twoscomp : \iota$ be given. Let $k9\_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v1\_circcomb : \iota \Rightarrow o$ be given. Let $v2\_circcomb : \iota \Rightarrow o$ be given. Let $l1\_msualg\_1 : \iota \Rightarrow o$ be given. Let $k2\_circcomb : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10\_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7\_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v11\_struct\_0 : \iota \Rightarrow o$ be given. Let $v1\_msualg\_1 : \iota \Rightarrow o$ be given. Let $v3\_circcomb : \iota \Rightarrow o$ be given. Let $k5\_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_circcomb : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k25\_twoscomp : \iota$ be given. Let $k11\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.k2\_xboole\_0\ (k2\_xboole\_0\ X0\ X1)\ X2 = k2\_xboole\_0\ X0\ (k2\_xboole\_0\ X1\ X2) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v1\_circcomb\ X0) \wedge ((v2\_circcomb\ X0) \wedge (l1\_msualg\_1\ X0)))) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge ((v1\_circcomb\ X1) \wedge ((v2\_circcomb\ X1) \wedge (l1\_msualg\_1\ X1)))) \Rightarrow (k3\_msafree2\ (k2\_circcomb\ X0\ X1) = k2\_xboole\_0\ (k3\_msafree2\ X0)\ (k3\_msafree2\ X1))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k3\_msafree2\ (k10\_gfacirc1\ X0\ X1\ X2) = k2\_xboole\_0\ (k1\_tarski\ (k4\_tarski\ (k10\_finseq\_1\ X0\ X1)\ k14\_twoscomp))\ (k1\_tarski\ (k12\_gfacirc1\ X0\ X1\ X2)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k3\_msafree2\ (k7\_gfacirc1\ X0\ X1\ X2) = k2\_xboole\_0\ (k1\_enumset1\ (k4\_tarski\ (k10\_finseq\_1\ X0\ X1)\ k2\_twoscomp)\ (k4\_tarski\ (k10\_finseq\_1\ X1\ X2)\ k2\_twoscomp)\ (k4\_tarski\ (k10\_finseq\_1\ X2\ X0)\ k2\_twoscomp))\ (k1\_tarski\ (k9\_gfacirc1\ X0\ X1\ X2)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(\neg v2\_struct\_0\ (k7\_gfacirc1\ X0\ X1\ X2))\wedge((\neg v11\_struct\_0\ (k7\_gfacirc1\ X0\ X1\ X2))\wedge((v1\_msualg\_1\ (k7\_gfacirc1\ X0\ X1\ X2))\wedge((v1\_circcomb\ (k7\_gfacirc1\ X0\ X1\ X2))\wedge((v2\_circcomb\ (k7\_gfacirc1\ X0\ X1\ X2))\wedge((v3\_circcomb\ (k7\_gfacirc1\ X0\ X1\ X2))\wedge(l1\_msualg\_1\ (k7\_gfacirc1\ X0\ X1\ X2))))))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(\neg v2\_struct\_0\ (k10\_gfacirc1\ X0\ X1\ X2))\wedge((\neg v11\_struct\_0\ (k10\_gfacirc1\ X0\ X1\ X2))\wedge((v1\_msualg\_1\ (k10\_gfacirc1\ X0\ X1\ X2))\wedge((v1\_circcomb\ (k10\_gfacirc1\ X0\ X1\ X2))\wedge((v2\_circcomb\ (k10\_gfacirc1\ X0\ X1\ X2))\wedge((v3\_circcomb\ (k10\_gfacirc1\ X0\ X1\ X2))\wedge(l1\_msualg\_1\ (k10\_gfacirc1\ X0\ X1\ X2))))))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k7\_gfacirc1\ X0\ X1\ X2 = k2\_circcomb\ (k5\_gfacirc1\ X0\ X1\ X2)\ (k5\_circcomb\ k25\_twoscomp\ (k11\_finseq\_1\ (k4\_tarski\ (k10\_finseq\_1\ X0\ X1)\ k2\_twoscomp)\ (k4\_tarski\ (k10\_finseq\_1\ X1\ X2)\ k2\_twoscomp)\ (k4\_tarski\ (k10\_finseq\_1\ X2\ X0)\ k2\_twoscomp))) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k13\_gfacirc1\ X0\ X1\ X2 = k2\_circcomb\ (k10\_gfacirc1\ X0\ X1\ X2)\ (k7\_gfacirc1\ X0\ X1\ X2) \tag{8}$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.k3\_msafree2\ (k13\_gfacirc1\ X0\ X1\ X2) = k2\_xboole\_0\ (k2\_xboole\_0\ (k2\_xboole\_0\ (k1\_tarski\ (k4\_tarski\ (k10\_finseq\_1\ X0\ X1)\ k14\_twoscomp))\ (k1\_tarski\ (k12\_gfacirc1\ X0\ X1\ X2)))\ (k1\_enumset1\ (k4\_tarski\ (k10\_finseq\_1\ X0\ X1)\ k2\_twoscomp)\ (k4\_tarski\ (k10\_finseq\_1\ X1\ X2)\ k2\_twoscomp)\ (k4\_tarski\ (k10\_finseq\_1\ X2\ X0)\ k2\_twoscomp)))\ (k1\_tarski\ (k9\_gfacirc1\ X0\ X1\ X2))$$