t73_facirc_1 (TMQJRRgfQzX6VRX9LzuJSs1oQ5gfeTkNvvF)

October 27, 2020

Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_facirc\_1 : \iota$ be given. Let $k3\_msafree2 : \iota \Rightarrow \iota$ be given. Let $k15\_facirc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_finseq\_1 : \iota \Rightarrow o$ be given. Let $k5\_circcomb : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k11\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v11\_struct\_0 : \iota \Rightarrow o$ be given. Let $v1\_msualg\_1 : \iota \Rightarrow o$ be given. Let $k14\_facirc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3\_circcomb : \iota \Rightarrow o$ be given. Let $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_tarski : \iota \Rightarrow \iota$ be given. Let $k4\_facirc\_1 : \iota$ be given. Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v1\_finseq\_1\ X0))) \Rightarrow (\forall X1.k4\_tarski\ X0\ X1 \in k3\_msafree2\ (k5\_circcomb\ X1\ X0)) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v1\_circcomb\ X0) \wedge ((v2\_circcomb\ X0) \wedge (l1\_msualg\_1\ X0)))) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge ((v1\_circcomb\ X1) \wedge ((v2\_circcomb\ X1) \wedge (l1\_msualg\_1\ X1)))) \Rightarrow (\forall X2.(X2 \in k3\_msafree2\ X0) \Rightarrow ((X2 \in k3\_msafree2\ (k2\_circcomb\ X0\ X1)) \wedge (X2 \in k3\_msafree2\ (k2\_circcomb\ X1\ X0))))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(v1\_relat\_1\ (k11\_finseq\_1\ X0\ X1\ X2)) \wedge (v1\_funct\_1\ (k11\_finseq\_1\ X0\ X1\ X2)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_finseq\_1\ X1))) \Rightarrow ((\neg v2\_struct\_0\ (k5\_circcomb\ X0\ X1)) \wedge ((\neg v11\_struct\_0\ (k5\_circcomb\ X0\ X1)) \wedge (v1\_msualg\_1\ (k5\_circcomb\ X0\ X1)))) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1\ (k10\_finseq\_1\ X0\ X1)) \wedge (v1\_funct\_1\ (k10\_finseq\_1\ X0\ X1)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge((v2\_circcomb\ X0)\wedge(l1\_msualg\_1\ X0)))\wedge((\neg v2\_struct\_0\ X1)\wedge((v2\_circcomb\ X1)\wedge(l1\_msualg\_1\ X1))))\Rightarrow((\neg v2\_struct\_0\ (k2\_circcomb\ X0\ X1))\wedge((v1\_msualg\_1\ (k2\_circcomb\ X0\ X1))\wedge(v2\_circcomb\ (k2\_circcomb\ X0\ X1)))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.v1\_finseq\_1\ (k11\_finseq\_1\ X0\ X1\ X2) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge((v1\_circcomb\ X0)\wedge(l1\_msualg\_1\ X0)))\wedge((\neg v2\_struct\_0\ X1)\wedge((v1\_circcomb\ X1)\wedge(l1\_msualg\_1\ X1))))\Rightarrow((\neg v2\_struct\_0\ (k2\_circcomb\ X0\ X1))\wedge((v1\_msualg\_1\ (k2\_circcomb\ X0\ X1))\wedge(v1\_circcomb\ (k2\_circcomb\ X0\ X1)))) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.v1\_finseq\_1\ (k10\_finseq\_1\ X0\ X1) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1)))\Rightarrow((\neg v11\_struct\_0\ (k5\_circcomb\ X0\ X1))\wedge((v1\_msualg\_1\ (k5\_circcomb\ X0\ X1))\wedge((v1\_circcomb\ (k5\_circcomb\ X0\ X1))\wedge(v2\_circcomb\ (k5\_circcomb\ X0\ X1))))) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1)))\Rightarrow((\neg v11\_struct\_0\ (k5\_circcomb\ X0\ X1))\wedge((v1\_msualg\_1\ (k5\_circcomb\ X0\ X1))\wedge(l1\_msualg\_1\ (k5\_circcomb\ X0\ X1)))) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge(l1\_msualg\_1\ X0))\wedge((\neg v2\_struct\_0\ X1)\wedge(l1\_msualg\_1\ X1)))\Rightarrow((\neg v2\_struct\_0\ (k2\_circcomb\ X0\ X1))\wedge((v1\_msualg\_1\ (k2\_circcomb\ X0\ X1))\wedge(l1\_msualg\_1\ (k2\_circcomb\ X0\ X1)))) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(\neg v2\_struct\_0\ (k14\_facirc\_1\ X0\ X1\ X2))\wedge((\neg v11\_struct\_0\ (k14\_facirc\_1\ X0\ X1\ X2))\wedge((v1\_msualg\_1\ (k14\_facirc\_1\ X0\ X1\ X2))\wedge((v1\_circcomb\ (k14\_facirc\_1\ X0\ X1\ X2))\wedge((v2\_circcomb\ (k14\_facirc\_1\ X0\ X1\ X2))\wedge((v3\_circcomb\ (k14\_facirc\_1\ X0\ X1\ X2))\wedge(l1\_msualg\_1\ (k14\_facirc\_1\ X0\ X1\ X2))))))) \tag{13}$$

Assume the following.

$$\forall X0.\forall X1.k4\_tarski\ X0\ X1 = k2\_tarski\ (k2\_tarski\ X0\ X1)\ (k1\_tarski\ X0) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k15\_facirc\_1\ X0\ X1\ X2 = k2\_circcomb\ (k14\_facirc\_1\ X0\ X1\ X2)\ (k5\_circcomb\ k4\_facirc\_1\ (k11\_finseq\_1\ (k4\_tarski\ (k10\_finseq\_1\ X0\ X1)\ k3\_facirc\_1)\ (k4\_tarski\ (k10\_finseq\_1\ X1\ X2)\ k3\_facirc\_1)\ (k4\_tarski\ (k10\_finseq\_1\ X2\ X0)\ k3\_facirc\_1))) \tag{15}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k14\_facirc\_1\ X0\ X1\ X2 = k2\_circcomb\ (k2\_circcomb\ (k5\_circcomb\ k3\_facirc\_1\ (k10\_finseq\_1\ X0\ X1))\ (k5\_circcomb\ k3\_facirc\_1\ (k10\_finseq\_1\ X1\ X2)))\ (k5\_circcomb\ k3\_facirc\_1\ (k10\_finseq\_1\ X2\ X0)) \tag{16}$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.(k4\_tarski\ (k10\_finseq\_1\ X0\ X1)\ k3\_facirc\_1 \in k3\_msafree2\ (k15\_facirc\_1\ X0\ X1\ X2))\wedge((k4\_tarski\ (k10\_finseq\_1\ X1\ X2)\ k3\_facirc\_1 \in k3\_msafree2\ (k15\_facirc\_1\ X0\ X1\ X2))\wedge(k4\_tarski\ (k10\_finseq\_1\ X2\ X0)\ k3\_facirc\_1 \in k3\_msafree2\ (k15\_facirc\_1\ X0\ X1\ X2)))$$