t81_facirc_1 (TM-cETZ2CBcESn4bdBiWhTanS1oHKi3vGsuT)

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Let $v1\_xtuple\_0 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_card\_3 : \iota \Rightarrow \iota$ be given. Let $u3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k15\_facirc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k18\_facirc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_margrel1 : \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_facirc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np\_\_2 : \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_facirc\_1 : \iota$ be given. Let $k10\_margrel1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v11\_struct\_0 : \iota \Rightarrow o$ be given. Let $v1\_circcomb : \iota \Rightarrow o$ be given. Let $l1\_msualg\_1 : \iota \Rightarrow o$ be given. Let $v4\_msafree2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v6\_circcomb : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k11\_facirc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k17\_facirc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_binarith : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4\_circcomb : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_msualg\_1 : \iota \Rightarrow o$ be given. Let $v2\_circcomb : \iota \Rightarrow o$ be given. Let $v3\_circcomb : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.(X0 \in u1\_struct\_0\ (k15\_facirc\_1\ X0\ X1\ X2)) \wedge ((X1 \in u1\_struct\_0\ (k15\_facirc\_1\ X0\ X1\ X2)) \wedge (X2 \in u1\_struct\_0\ (k15\_facirc\_1\ X0\ X1\ X2))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1\ X0\ X1) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2\_struct\_0\ X0) \wedge ((\neg v11\_struct\_0\ X0) \wedge ((v1\_circcomb\ X0) \wedge (l1\_msualg\_1\ X0)))) \wedge (((v4\_msafree2\ X1\ X0) \wedge ((v6\_circcomb\ X1\ X0) \wedge (l3\_msualg\_1\ X1\ X0))) \wedge ((m1\_subset\_1\ X2\ (k4\_card\_3\ (u3\_msualg\_1\ X0\ X1))) \wedge (m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))))) \Rightarrow (k11\_facirc\_1\ X0\ X1\ X2\ X3 = k1\_funct\_1\ X2\ X3) \tag{3}$$

Assume the following.

$$\forall X0.(\neg v1\_xtuple\_0\ X0)\Rightarrow(\forall X1.(\neg v1\_xtuple\_0\ X1)\Rightarrow (\forall X2.(\neg v1\_xtuple\_0\ X2)\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k4\_card\_3\ (u3\_msualg\_1\ (k15\_facirc\_1\ X0\ X1\ X2)\ (k18\_facirc\_1\ X0\ X1\ X2))))\Rightarrow (\forall X4.(m1\_subset\_1\ X4\ k6\_margrel1)\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ k6\_margrel1)\Rightarrow(\forall X6.(m1\_subset\_1\ X6\ k6\_margrel1)\Rightarrow(((X4 = k1\_funct\_1\ X3\ X0)\wedge((X5 = k1\_funct\_1\ X3\ X1)\wedge(X6 = k1\_funct\_1\ X3\ X2)))\Rightarrow((k11\_facirc\_1\ (k15\_facirc\_1\ X0\ X1\ X2)\ (k18\_facirc\_1\ X0\ X1\ X2)\ (k5\_facirc\_1\ (k15\_facirc\_1\ X0\ X1\ X2)\ (k18\_facirc\_1\ X0\ X1\ X2)\ X3\ np\_\_2)\ (k17\_facirc\_1\ X0\ X1\ X2) = k1\_binarith\ (k1\_binarith\ (k10\_margrel1\ X4\ X5)\ (k10\_margrel1\ X5\ X6))\ (k10\_margrel1\ X6\ X4))\wedge ((k1\_funct\_1\ (k5\_facirc\_1\ (k15\_facirc\_1\ X0\ X1\ X2)\ (k18\_facirc\_1\ X0\ X1\ X2)\ X3\ np\_\_2)\ (k4\_tarski\ (k10\_finseq\_1\ X0\ X1)\ k3\_facirc\_1) = k10\_margrel1\ X4\ X5)\wedge((k1\_funct\_1\ (k5\_facirc\_1\ (k15\_facirc\_1\ X0\ X1\ X2)\ (k18\_facirc\_1\ X0\ X1\ X2)\ X3\ np\_\_2)\ (k4\_tarski\ (k10\_finseq\_1\ X1\ X2)\ k3\_facirc\_1) = k10\_margrel1\ X5\ X6)\wedge(k1\_funct\_1\ (k5\_facirc\_1\ (k15\_facirc\_1\ X0\ X1\ X2)\ (k18\_facirc\_1\ X0\ X1\ X2)\ X3\ np\_\_2)\ (k4\_tarski\ (k10\_finseq\_1\ X2\ X0)\ k3\_facirc\_1) = k10\_margrel1\ X6\ X4)))))))))))) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(v3\_msualg\_1\ (k18\_facirc\_1\ X0\ X1\ X2)\ (k15\_facirc\_1\ X0\ X1\ X2))\wedge((v4\_msafree2\ (k18\_facirc\_1\ X0\ X1\ X2)\ (k15\_facirc\_1\ X0\ X1\ X2))\wedge((v4\_circcomb\ (k18\_facirc\_1\ X0\ X1\ X2)\ (k15\_facirc\_1\ X0\ X1\ X2))\wedge((v6\_circcomb\ (k18\_facirc\_1\ X0\ X1\ X2)\ (k15\_facirc\_1\ X0\ X1\ X2))\wedge(l3\_msualg\_1\ (k18\_facirc\_1\ X0\ X1\ X2)\ (k15\_facirc\_1\ X0\ X1\ X2)))))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(\neg v2\_struct\_0\ (k15\_facirc\_1\ X0\ X1\ X2))\wedge((\neg v11\_struct\_0\ (k15\_facirc\_1\ X0\ X1\ X2))\wedge((v1\_msualg\_1\ (k15\_facirc\_1\ X0\ X1\ X2))\wedge((v1\_circcomb\ (k15\_facirc\_1\ X0\ X1\ X2))\wedge ((v2\_circcomb\ (k15\_facirc\_1\ X0\ X1\ X2))\wedge((v3\_circcomb\ (k15\_facirc\_1\ X0\ X1\ X2))\wedge(l1\_msualg\_1\ (k15\_facirc\_1\ X0\ X1\ X2))))))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge((v1\_circcomb\ X0)\wedge(l1\_msualg\_1\ X0))))\wedge (((v4\_msafree2\ X1\ X0)\wedge((v6\_circcomb\ X1\ X0)\wedge(l3\_msualg\_1\ X1\ X0)))\wedge ((m1\_subset\_1\ X2\ (k4\_card\_3\ (u3\_msualg\_1\ X0\ X1)))\wedge(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)))))\Rightarrow(m1\_subset\_1\ (k11\_facirc\_1\ X0\ X1\ X2\ X3)\ k6\_margrel1) \tag{7}$$

Theorem 1

$$\forall X0.(\neg v1\_xtuple\_0\ X0)\Rightarrow(\forall X1.(\neg v1\_xtuple\_0\ X1)\Rightarrow (\forall X2.(\neg v1\_xtuple\_0\ X2)\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k4\_card\_3\ (u3\_msualg\_1\ (k15\_facirc\_1\ X0\ X1\ X2)\ (k18\_facirc\_1\ X0\ X1\ X2))))\Rightarrow (\forall X4.(m1\_subset\_1\ X4\ k6\_margrel1)\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ k6\_margrel1)\Rightarrow(((X4 = k1\_funct\_1\ X3\ X1)\wedge(X5 = k1\_funct\_1\ X3\ X2))\Rightarrow (k1\_funct\_1\ (k5\_facirc\_1\ (k15\_facirc\_1\ X0\ X1\ X2)\ (k18\_facirc\_1\ X0\ X1\ X2)\ X3\ np\_\_2)\ (k4\_tarski\ (k10\_finseq\_1\ X1\ X2)\ k3\_facirc\_1) = k10\_margrel1\ X4\ X5)))))))$$