t11_gfacirc2 (TM-NwH1EErtBXWZRwczSMPQgs9bV64qjHb9r)

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Let $v7\_ordinal1 : \iota \Rightarrow o$ 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 $k3\_msafree2 : \iota \Rightarrow \iota$ be given. Let $k1\_gfacirc2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np\_\_1 : \iota$ be given. Let $k2\_circcomb : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13\_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_gfacirc2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_gfacirc2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_circcomb : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k14\_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k5\_circcomb : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_numbers : \iota$ be given. Let $k1\_margrel1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_margrel1 : \iota$ be given. Let $k4\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7\_margrel1 : \iota$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $k7\_circcomb : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ 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. Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_finseq\_1\ X1))) \Rightarrow (\forall X2.((v1\_relat\_1\ X2) \wedge ((v1\_funct\_1\ X2) \wedge (v1\_finseq\_1\ X2))) \Rightarrow ((k1\_gfacirc2\ (k1\_nat\_1\ X0\ np\_\_1)\ X1\ X2 = k2\_circcomb\ (k1\_gfacirc2\ X0\ X1\ X2)\ (k13\_gfacirc1\ (k1\_funct\_1\ X1\ (k1\_nat\_1\ X0\ np\_\_1))\ (k1\_funct\_1\ X2\ (k1\_nat\_1\ X0\ np\_\_1))\ (k3\_gfacirc2\ X0\ X1\ X2))) \wedge ((k2\_gfacirc2\ (k1\_nat\_1\ X0\ np\_\_1)\ X1\ X2 = k3\_circcomb\ (k1\_gfacirc2\ X0\ X1\ X2)\ (k13\_gfacirc1\ (k1\_funct\_1\ X1\ (k1\_nat\_1\ X0\ np\_\_1))\ (k1\_funct\_1\ X2\ (k1\_nat\_1\ X0\ np\_\_1))\ (k3\_gfacirc2\ X0\ X1\ X2))\ (k2\_gfacirc2\ X0\ X1\ X2)\ (k14\_gfacirc1\ (k1\_funct\_1\ X1\ (k1\_nat\_1\ X0\ np\_\_1))\ (k1\_funct\_1\ X2\ (k1\_nat\_1\ X0\ np\_\_1))\ (k3\_gfacirc2\ X0\ X1\ X2))) \wedge (k3\_gfacirc2\ (k1\_nat\_1\ X0\ np\_\_1)\ X1\ X2 = k9\_gfacirc1\ (k1\_funct\_1\ X1\ (k1\_nat\_1\ X0\ np\_\_1))\ (k1\_funct\_1\ X2\ (k1\_nat\_1\ X0\ np\_\_1))\ (k3\_gfacirc2\ X0\ X1\ X2)))))) \tag{1}$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1)))\Rightarrow(v1\_relat\_1\ (k3\_msafree2\ (k5\_circcomb\ X0\ X1))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.v1\_relat\_1\ (k3\_msafree2\ (k13\_gfacirc1\ X0\ X1\ X2)) \tag{4}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1)))\Rightarrow((k1\_gfacirc2\ k6\_numbers\ X0\ X1 = k5\_circcomb\ (k1\_margrel1\ k6\_margrel1\ (k4\_finseq\_2\ k6\_numbers\ k6\_margrel1)\ k7\_margrel1)\ k1\_xboole\_0)\wedge((k2\_gfacirc2\ k6\_numbers\ X0\ X1 = k7\_circcomb\ k1\_xboole\_0\ k6\_margrel1\ (k1\_margrel1\ k6\_margrel1\ (k4\_finseq\_2\ k6\_numbers\ k6\_margrel1)\ k7\_margrel1)\ k1\_xboole\_0)\wedge(k3\_gfacirc2\ k6\_numbers\ X0\ X1 = k4\_tarski\ k1\_xboole\_0\ (k1\_margrel1\ k6\_margrel1\ (k4\_finseq\_2\ k6\_numbers\ k6\_margrel1)\ k7\_margrel1))))) \tag{5}$$

Assume the following.

$$\forall X0 : \iota\Rightarrow o.((X0\ k6\_numbers)\wedge(\forall X1.(v7\_ordinal1\ X1)\Rightarrow((X0\ X1)\Rightarrow(X0\ (k1\_nat\_1\ X1\ np\_\_1)))))\Rightarrow(\forall X1.(v7\_ordinal1\ X1)\Rightarrow(X0\ X1)) \tag{6}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{7}$$

Assume the following.

$$v1\_xboole\_0\ k1\_xboole\_0 \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v7\_ordinal1\ X0)\wedge(((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1)))\wedge((v1\_relat\_1\ X2)\wedge((v1\_funct\_1\ X2)\wedge(v1\_finseq\_1\ X2)))))\Rightarrow((\neg v2\_struct\_0\ (k1\_gfacirc2\ X0\ X1\ X2))\wedge((\neg v11\_struct\_0\ (k1\_gfacirc2\ X0\ X1\ X2))\wedge((v1\_msualg\_1\ (k1\_gfacirc2\ X0\ X1\ X2))\wedge((v1\_circcomb\ (k1\_gfacirc2\ X0\ X1\ X2))\wedge((v2\_circcomb\ (k1\_gfacirc2\ X0\ X1\ X2))\wedge((v3\_circcomb\ (k1\_gfacirc2\ X0\ X1\ X2))\wedge(l1\_msualg\_1\ (k1\_gfacirc2\ X0\ X1\ X2)))))))) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(\neg v2\_struct\_0\ (k13\_gfacirc1\ X0\ X1\ X2))\wedge((\neg v11\_struct\_0\ (k13\_gfacirc1\ X0\ X1\ X2))\wedge((v1\_msualg\_1\ (k13\_gfacirc1\ X0\ X1\ X2))\wedge((v1\_circcomb\ (k13\_gfacirc1\ X0\ X1\ X2))\wedge((v2\_circcomb\ (k13\_gfacirc1\ X0\ X1\ X2))\wedge((v3\_circcomb\ (k13\_gfacirc1\ X0\ X1\ X2))\wedge(l1\_msualg\_1\ (k13\_gfacirc1\ X0\ X1\ X2))))))) \tag{10}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_xboole\_0\ X0))\Rightarrow((v1\_relat\_1\ X0)\wedge(v1\_finseq\_1\ X0)) \tag{11}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow(v1\_relat\_1\ X0) \tag{12}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow(v1\_funct\_1\ X0) \tag{13}$$

Theorem 1

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1)))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge((v1\_funct\_1\ X2)\wedge(v1\_finseq\_1\ X2)))\Rightarrow(v1\_relat\_1\ (k3\_msafree2\ (k1\_gfacirc2\ X0\ X1\ X2)))))$$