t19_gr_cy_1 (TMVe5NSoBvKkVjpsRrnQYPLFva2Z8jY5dGC)

October 27, 2020

Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v8\_struct\_0 : \iota \Rightarrow o$ be given. Let $v2\_group\_1 : \iota \Rightarrow o$ be given. Let $v3\_group\_1 : \iota \Rightarrow o$ be given. Let $l3\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v1\_gr\_cy\_1 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k6\_group\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7\_group\_1 : \iota \Rightarrow \iota$ be given. Let $k5\_group\_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_group\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $g3\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2\_algstr\_0 : \iota \Rightarrow \iota$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $k7\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $v1\_finset\_1 : \iota \Rightarrow o$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v15\_algstr\_0 : \iota \Rightarrow o$ be given. Let $k1\_card\_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v8\_struct\_0\ X0) \wedge ((v2\_group\_1\ X0) \wedge ((v3\_group\_1\ X0) \wedge (l3\_algstr\_0\ X0))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (k6\_group\_1\ X0\ X1 = k7\_group\_1\ (k5\_group\_4\ X0\ (k6\_domain\_1\ (u1\_struct\_0\ X0)\ X1)))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v8\_struct\_0\ X0) \wedge ((v2\_group\_1\ X0) \wedge ((v3\_group\_1\ X0) \wedge (l3\_algstr\_0\ X0))))) \Rightarrow (\forall X1.(m1\_group\_2\ X1\ X0) \Rightarrow ((k7\_group\_1\ X0 = k7\_group\_1\ X1) \Rightarrow (g3\_algstr\_0\ (u1\_struct\_0\ X1)\ (u2\_algstr\_0\ X1) = g3\_algstr\_0\ (u1\_struct\_0\ X0)\ (u2\_algstr\_0\ X0)))) \tag{2}$$

Assume the following.

$$\forall X0.((v8\_struct\_0\ X0) \wedge (l1\_struct\_0\ X0)) \Rightarrow (k7\_group\_1\ X0 = k7\_struct\_0\ X0) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\Rightarrow(\forall X2.\forall X3.(g3\_algstr\_0\ X0\ X1 = g3\_algstr\_0\ X2\ X3)\Rightarrow((X0 = X2)\wedge(X1 = X3))) \tag{4}$$

Assume the following.

$$\forall X0.((\neg v8\_struct\_0\ X0)\wedge(l1\_struct\_0\ X0))\Rightarrow(\neg v1\_finset\_1\ (u1\_struct\_0\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.((v8\_struct\_0\ X0)\wedge(l1\_struct\_0\ X0))\Rightarrow(v1\_finset\_1\ (u1\_struct\_0\ X0)) \tag{6}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_struct\_0\ X0))\Rightarrow(\neg v1\_xboole\_0\ (u1\_struct\_0\ X0)) \tag{7}$$

Assume the following.

$$\forall X0.(l3\_algstr\_0\ X0)\Rightarrow((v1\_funct\_1\ (u2\_algstr\_0\ X0))\wedge((v1\_funct\_2\ (u2\_algstr\_0\ X0)\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ (u2\_algstr\_0\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0)))))) \tag{8}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_group\_1\ X0)\wedge(l3\_algstr\_0\ X0)))\Rightarrow(\forall X1.(m1\_group\_2\ X1\ X0)\Rightarrow((\neg v2\_struct\_0\ X1)\wedge((v2\_group\_1\ X1)\wedge(l3\_algstr\_0\ X1)))) \tag{9}$$

Assume the following.

$$\forall X0.(l3\_algstr\_0\ X0)\Rightarrow(l1\_struct\_0\ X0) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge(m1\_subset\_1\ X1\ X0))\Rightarrow(m1\_subset\_1\ (k6\_domain\_1\ X0\ X1)\ (k1\_zfmisc\_1\ X0)) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge((v2\_group\_1\ X0)\wedge((v3\_group\_1\ X0)\wedge(l3\_algstr\_0\ X0))))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))\Rightarrow((v15\_algstr\_0\ (k5\_group\_4\ X0\ X1))\wedge(m1\_group\_2\ (k5\_group\_4\ X0\ X1)\ X0)) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\Rightarrow((v15\_algstr\_0\ (g3\_algstr\_0\ X0\ X1))\wedge(l3\_algstr\_0\ (g3\_algstr\_0\ X0\ X1))) \tag{13}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_group\_1\ X0)\wedge((v3\_group\_1\ X0)\wedge(l3\_algstr\_0\ X0))))\Rightarrow((v1\_gr\_cy\_1\ X0)\Leftrightarrow(\exists X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\wedge(g3\_algstr\_0\ (u1\_struct\_0\ X0)\ (u2\_algstr\_0\ X0) = k5\_group\_4\ X0\ (k6\_domain\_1\ (u1\_struct\_0\ X0)\ X1)))) \tag{14}$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0)\Rightarrow(k7\_struct\_0\ X0 = k1\_card\_1\ (u1\_struct\_0\ X0)) \tag{15}$$

Assume the following.

$$\forall X0.(l3\_algstr\_0\ X0)\Rightarrow((v15\_algstr\_0\ X0)\Rightarrow(X0 = g3\_algstr\_0\ (u1\_struct\_0\ X0)\ (u2\_algstr\_0\ X0))) \tag{16}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v8\_struct\_0\ X0)\wedge((v2\_group\_1\ X0)\wedge((v3\_group\_1\ X0)\wedge(l3\_algstr\_0\ X0)))))\Rightarrow((v1\_gr\_cy\_1\ X0)\Leftrightarrow(\exists X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\wedge(k6\_group\_1\ X0\ X1 = k7\_group\_1\ X0)))$$