t32_morph_01 (TMaV24PjuWCb55AryVNc3krnNB3kfxMawHe)

October 27, 2020

Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v13\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v2\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v3\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v4\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v5\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v6\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v7\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v8\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $l1\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9\_setfam\_1 : \iota \Rightarrow \iota$ be given. Let $k3\_morph\_01 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_morph\_01 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_rusub\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_morph\_01 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l2\_algstr\_0 : \iota \Rightarrow o$ be given. Let $k2\_morph\_01 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge ((v5\_rlvect\_1\ X0) \wedge ((v6\_rlvect\_1\ X0) \wedge ((v7\_rlvect\_1\ X0) \wedge ((v8\_rlvect\_1\ X0) \wedge (l1\_rlvect\_1\ X0))))))))) \Rightarrow (\forall X1.((\neg v1\_xboole\_0\ X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))) \Rightarrow (\forall X2.((\neg v1\_xboole\_0\ X2) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))) \Rightarrow ((k6\_rusub\_4\ X0\ (k6\_subset\_1\ (u1\_struct\_0\ X0)\ X1)\ X2 = k6\_subset\_1\ (u1\_struct\_0\ X0)\ (k1\_morph\_01\ X0\ X1\ X2)) \wedge (k1\_morph\_01\ X0\ (k6\_subset\_1\ (u1\_struct\_0\ X0)\ X1)\ X2 = k6\_subset\_1\ (u1\_struct\_0\ X0)\ (k6\_rusub\_4\ X0\ X1\ X2)))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.k6\_subset\_1\ X0\ X1 = k4\_xboole\_0\ X0\ X1 \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0) \wedge ((v2\_rlvect\_1\ X0) \wedge (l2\_algstr\_0\ X0))) \wedge ((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))) \Rightarrow (k2\_morph\_01\ X0\ X1\ X2 = k6\_rusub\_4\ X0\ X1\ X2) \tag{3}$$

Assume the following.

$$\forall X0.(l1\_rlvect\_1\ X0)\Rightarrow(l2\_algstr\_0\ X0) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.m1\_subset\_1\ (k6\_subset\_1\ X0\ X1)\ (k1\_zfmisc\_1\ X0) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v5\_rlvect\_1\ X0)\wedge((v6\_rlvect\_1\ X0)\wedge((v7\_rlvect\_1\ X0)\wedge((v8\_rlvect\_1\ X0)\wedge(l1\_rlvect\_1\ X0))))))))))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))\Rightarrow((v1\_funct\_1\ (k4\_morph\_01\ X0\ X1))\wedge((v1\_funct\_2\ (k4\_morph\_01\ X0\ X1)\ (k9\_setfam\_1\ (u1\_struct\_0\ X0)))\ (k9\_setfam\_1\ (u1\_struct\_0\ X0)))\wedge(m1\_subset\_1\ (k4\_morph\_01\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k9\_setfam\_1\ (u1\_struct\_0\ X0))\ (k9\_setfam\_1\ (u1\_struct\_0\ X0))))))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v5\_rlvect\_1\ X0)\wedge((v6\_rlvect\_1\ X0)\wedge((v7\_rlvect\_1\ X0)\wedge((v8\_rlvect\_1\ X0)\wedge(l1\_rlvect\_1\ X0))))))))))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))\Rightarrow((v1\_funct\_1\ (k3\_morph\_01\ X0\ X1))\wedge((v1\_funct\_2\ (k3\_morph\_01\ X0\ X1)\ (k9\_setfam\_1\ (u1\_struct\_0\ X0)))\ (k9\_setfam\_1\ (u1\_struct\_0\ X0)))\wedge(m1\_subset\_1\ (k3\_morph\_01\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k9\_setfam\_1\ (u1\_struct\_0\ X0))\ (k9\_setfam\_1\ (u1\_struct\_0\ X0))))))) \tag{7}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v5\_rlvect\_1\ X0)\wedge((v6\_rlvect\_1\ X0)\wedge((v7\_rlvect\_1\ X0)\wedge((v8\_rlvect\_1\ X0)\wedge(l1\_rlvect\_1\ X0))))))))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k9\_setfam\_1\ (u1\_struct\_0\ X0))\ (k9\_setfam\_1\ (u1\_struct\_0\ X0)))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k9\_setfam\_1\ (u1\_struct\_0\ X0))\ (k9\_setfam\_1\ (u1\_struct\_0\ X0))))))\Rightarrow((X2 = k4\_morph\_01\ X0\ X1)\Leftrightarrow(\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(k3\_funct\_2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))\ (k9\_setfam\_1\ (u1\_struct\_0\ X0))\ X2\ X3 = k1\_morph\_01\ X0\ X3\ X1))))) \tag{8}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v5\_rlvect\_1\ X0)\wedge((v6\_rlvect\_1\ X0)\wedge((v7\_rlvect\_1\ X0)\wedge((v8\_rlvect\_1\ X0)\wedge(l1\_rlvect\_1\ X0))))))))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k9\_setfam\_1\ (u1\_struct\_0\ X0))\ (k9\_setfam\_1\ (u1\_struct\_0\ X0)))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k9\_setfam\_1\ (u1\_struct\_0\ X0))\ (k9\_setfam\_1\ (u1\_struct\_0\ X0)))))))\Rightarrow((X2 = k3\_morph\_01\ X0\ X1)\Leftrightarrow(\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(k3\_funct\_2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))\ (k9\_setfam\_1\ (u1\_struct\_0\ X0))\ X2\ X3 = k2\_morph\_01\ X0\ X3\ X1)))))) \tag{9}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v5\_rlvect\_1\ X0)\wedge((v6\_rlvect\_1\ X0)\wedge((v7\_rlvect\_1\ X0)\wedge((v8\_rlvect\_1\ X0)\wedge(l1\_rlvect\_1\ X0))))))))))\Rightarrow(\forall X1.((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))\Rightarrow(\forall X2.((\neg v1\_xboole\_0\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))\Rightarrow((k3\_funct\_2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))\ (k9\_setfam\_1\ (u1\_struct\_0\ X0))\ (k3\_morph\_01\ X0\ X1)\ (k6\_subset\_1\ (u1\_struct\_0\ X0)\ X2) = k6\_subset\_1\ (u1\_struct\_0\ X0)\ (k3\_funct\_2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))\ (k9\_setfam\_1\ (u1\_struct\_0\ X0))\ (k4\_morph\_01\ X0\ X1)\ X2))\wedge(k3\_funct\_2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))\ (k9\_setfam\_1\ (u1\_struct\_0\ X0))\ (k4\_morph\_01\ X0\ X1)\ (k6\_subset\_1\ (u1\_struct\_0\ X0)\ X2) = k6\_subset\_1\ (u1\_struct\_0\ X0)\ (k3\_funct\_2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))\ (k9\_setfam\_1\ (u1\_struct\_0\ X0))\ (k3\_morph\_01\ X0\ X1)\ X2)))))$$