t39_mathmorp (TMUwtLuu1XrRt9f6eXcfJ4Z4kf6GJqkywUH)

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 $l1\_rlvect\_1 : \iota \Rightarrow o$ 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 $k3\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_mathmorp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_mathmorp : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_mathmorp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_mathmorp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_rusub\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l2\_algstr\_0 : \iota \Rightarrow o$ be given. Let $l2\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_algstr\_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge (l1\_rlvect\_1\ X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (k3\_subset\_1\ (u1\_struct\_0\ X0)\ (k3\_mathmorp\ X0\ (k3\_subset\_1\ (u1\_struct\_0\ X0)\ X1)\ X2) = k6\_rusub\_4\ X0\ X1\ (k2\_mathmorp\ X0\ X2)))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge (l1\_rlvect\_1\ X0))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (k2\_mathmorp\ X0\ (k2\_mathmorp\ X0\ X1) = X1)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)) \Rightarrow (k3\_subset\_1\ X0\ (k3\_subset\_1\ X0\ X1) = X1) \tag{3}$$

Assume the following.

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

Assume the following.

$$\forall X0.(l1\_rlvect\_1\ X0) \Rightarrow (l2\_algstr\_0\ X0) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge(l2\_algstr\_0\ X0))\wedge((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))))\Rightarrow(m1\_subset\_1\ (k5\_mathmorp\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\Rightarrow(m1\_subset\_1\ (k3\_subset\_1\ X0\ X1)\ (k1\_zfmisc\_1\ X0)) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge(l1\_algstr\_0\ X0))\wedge((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))))\Rightarrow(m1\_subset\_1\ (k3\_mathmorp\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge(l2\_algstr\_0\ X0))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))\Rightarrow(m1\_subset\_1\ (k2\_mathmorp\ X0\ X1)\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \tag{9}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l2\_algstr\_0\ X0))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(k5\_mathmorp\ X0\ X1\ X2 = k3\_mathmorp\ X0\ (k6\_rusub\_4\ X0\ X1\ X2)\ X2))) \tag{10}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l2\_algstr\_0\ X0))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(k4\_mathmorp\ X0\ X1\ X2 = k6\_rusub\_4\ X0\ (k3\_mathmorp\ X0\ X1\ X2)\ X2))) \tag{11}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l1\_rlvect\_1\ X0))))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(k3\_subset\_1\ (u1\_struct\_0\ X0)\ (k4\_mathmorp\ X0\ (k3\_subset\_1\ (u1\_struct\_0\ X0)\ X1)\ (k2\_mathmorp\ X0\ X2)) = k5\_mathmorp\ X0\ X1\ X2)))$$