t49_comseq_3 (TMNER-CMj7qEdFWbw4R7gnZGnbQ2GgVUxVy4)

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Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_numbers : \iota$ be given. Let $k2\_numbers : \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2\_valued\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7\_comseq\_3 : \iota \Rightarrow \iota$ be given. Let $k1\_numbers : \iota$ be given. Let $k8\_comseq\_3 : \iota \Rightarrow \iota$ be given. Let $v5\_valued\_0 : \iota \Rightarrow o$ be given. Let $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9\_comseq\_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_valued\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $m1\_valued\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((v1\_funct\_1\ X0) \wedge ((v1\_funct\_2\ X0\ k5\_numbers\ k2\_numbers) \wedge (m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k2\_numbers))))) \Rightarrow (\forall X1.((v1\_funct\_1\ X1) \wedge ((v1\_funct\_2\ X1\ k5\_numbers\ k5\_numbers) \wedge ((v5\_valued\_0\ X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k5\_numbers)))))) \Rightarrow ((r2\_funct\_2\ k5\_numbers\ k1\_numbers\ (k7\_comseq\_3\ (k9\_comseq\_3\ X1\ X0))\ (k2\_valued\_0\ k1\_numbers\ X1\ (k7\_comseq\_3\ X0))) \wedge (r2\_funct\_2\ k5\_numbers\ k1\_numbers\ (k8\_comseq\_3\ (k9\_comseq\_3\ X1\ X0))\ (k2\_valued\_0\ k1\_numbers\ X1\ (k8\_comseq\_3\ X0)))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X2) \wedge ((v1\_funct\_2\ X2\ X0\ X1) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))) \wedge ((v1\_funct\_1\ X3) \wedge ((v1\_funct\_2\ X3\ X0\ X1) \wedge (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))))) \Rightarrow ((r2\_funct\_2\ X0\ X1\ X2\ X3) \Leftrightarrow (X2 = X3)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ X0))))))\Rightarrow(\forall X2.(m2\_valued\_0\ X2\ X0\ X1)\Leftrightarrow(m1\_valued\_0\ X2\ X1)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_funct\_1\ X0)\wedge((v1\_funct\_2\ X0\ k5\_numbers\ k5\_numbers)\wedge((v5\_valued\_0\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k5\_numbers))))))\wedge((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ k2\_numbers)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k2\_numbers))))))\Rightarrow(k9\_comseq\_3\ X0\ X1 = k3\_relat\_1\ X0\ X1) \tag{4}$$

Assume the following.

$$\neg v1\_xboole\_0\ k2\_numbers \tag{5}$$

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$$\neg v1\_xboole\_0\ k1\_numbers \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ X0))))))\Rightarrow(\forall X2.(m2\_valued\_0\ X2\ X0\ X1)\Rightarrow((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ X0)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ X0)))))) \tag{7}$$

Assume the following.

$$\forall X0.((v1\_funct\_1\ X0)\wedge((v1\_funct\_2\ X0\ k5\_numbers\ k2\_numbers)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k2\_numbers)))))\Rightarrow((v1\_funct\_1\ (k8\_comseq\_3\ X0))\wedge((v1\_funct\_2\ (k8\_comseq\_3\ X0)\ k5\_numbers\ k1\_numbers)\wedge(m1\_subset\_1\ (k8\_comseq\_3\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers))))) \tag{8}$$

Assume the following.

$$\forall X0.((v1\_funct\_1\ X0)\wedge((v1\_funct\_2\ X0\ k5\_numbers\ k2\_numbers)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k2\_numbers)))))\Rightarrow((v1\_funct\_1\ (k7\_comseq\_3\ X0))\wedge((v1\_funct\_2\ (k7\_comseq\_3\ X0)\ k5\_numbers\ k1\_numbers)\wedge(m1\_subset\_1\ (k7\_comseq\_3\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers))))) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge(((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ k5\_numbers)\wedge((v5\_valued\_0\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k5\_numbers))))))\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ X0)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ X0)))))))\Rightarrow(m2\_valued\_0\ (k2\_valued\_0\ X0\ X1\ X2)\ X0\ X2) \tag{10}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ k5\_numbers)\wedge((v1\_funct\_1\ X0)\wedge(v1\_partfun1\ X0\ k5\_numbers))))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ k5\_numbers)\wedge((v1\_funct\_1\ X1)\wedge(v1\_partfun1\ X1\ k5\_numbers))))\Rightarrow((m1\_valued\_0\ X1\ X0)\Leftrightarrow(\exists X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ k5\_numbers)\wedge((v5\_valued\_0\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k5\_numbers))))))\wedge(X1 = k3\_relat\_1\ X2\ X0)))) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.(\neg v1\_xboole\_0\ X1)\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow((v1\_funct\_2\ X2\ X0\ X1)\Rightarrow(v1\_partfun1\ X2\ X0))) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow((v4\_relat\_1\ X2\ X0)\wedge(v5\_relat\_1\ X2\ X1)) \tag{13}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(v1\_relat\_1\ X2) \tag{14}$$

Theorem 1

$$\forall X0.((v1\_funct\_1\ X0)\wedge((v1\_funct\_2\ X0\ k5\_numbers\ k2\_numbers)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k2\_numbers)))))\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ k2\_numbers)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k2\_numbers)))))\Rightarrow((m2\_valued\_0\ X0\ k2\_numbers\ X1)\Rightarrow((m2\_valued\_0\ (k7\_comseq\_3\ X0)\ k1\_numbers\ (k7\_comseq\_3\ X1))\wedge(m2\_valued\_0\ (k8\_comseq\_3\ X0)\ k1\_numbers\ (k8\_comseq\_3\ X1)))))$$