t12_mesfun9c (TMKWsdsK4k8m8nbfPgC4DAxro7w6u8vhjSf)

October 27, 2020

Let $v1\_xboole\_0 : \iota \Rightarrow o$ 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 $k5\_numbers : \iota$ be given. Let $k4\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_numbers : \iota$ 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 $v7\_ordinal1 : \iota \Rightarrow o$ be given. Let $v1\_mesfunc8 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_mesfunc5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_numbers : \iota$ be given. Let $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_series\_1 : \iota \Rightarrow \iota$ be given. Let $k10\_seqfunc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_mesfun9c : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2\_mesfunc9 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_mesfun7c : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7\_numbers : \iota$ be given. Let $k4\_mesfunc9 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_mesfunc9 : \iota \Rightarrow \iota$ be given. Let $k1\_mesfunc5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_mesfunc9 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_mesfunc5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $k4\_ordinal1 : \iota$ be given. Let $r1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_rfunct\_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v3\_valued\_0 : \iota \Rightarrow o$ be given. Let $v2\_valued\_0 : \iota \Rightarrow o$ be given. Let $v3\_ordinal1 : \iota \Rightarrow o$ be given. Let $v3\_membered : \iota \Rightarrow o$ be given. Let $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2\_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.((v1\_funct\_1\ X1) \wedge ((v1\_funct\_2\ X1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers)) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers)))))) \Rightarrow (v2\_mesfunc9\ (k1\_mesfun7c\ X0\ X1)\ X0)) \tag{1}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.((v1\_funct\_1\ X1) \wedge ((v1\_funct\_2\ X1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers)) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers)))))) \Rightarrow (r2\_funct\_2\ k5\_numbers\ (k4\_partfun1\ X0\ k7\_numbers)\ (k4\_mesfunc9\ X0\ (k1\_mesfun7c\ X0\ X1))\ (k1\_mesfun7c\ X0\ (k2\_mesfun9c\ X0\ X1)))) \tag{2}$$

Assume the following.

$$\forall X0.((v1\_funct\_1\ X0)\wedge((v1\_funct\_2\ X0\ k5\_numbers\ k1\_numbers)\wedge (m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers)))))\Rightarrow (r2\_funct\_2\ k5\_numbers\ k7\_numbers\ (k2\_mesfunc9\ (k1\_mesfunc5\ k5\_numbers\ X0))\ (k1\_mesfunc5\ k5\_numbers\ (k3\_series\_1\ X0))) \tag{3}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ (k4\_partfun1\ X1\ X0\ k7\_numbers))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X1\ X0\ k7\_numbers))))))\Rightarrow (\forall X2.(v7\_ordinal1\ X2)\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ X0)\Rightarrow (\forall X4.((v2\_mesfunc9\ X1\ X0)\wedge((v1\_mesfunc8\ X1\ X0\ k7\_numbers)\wedge ((r1\_tarski\ X4\ (k1\_relset\_1\ X0\ (k4\_mesfunc5\ X0\ k7\_numbers\ X1\ k6\_numbers)))\wedge (X3\in X4))))\Rightarrow(k1\_mesfunc9\ (k2\_mesfunc9\ (k3\_mesfunc5\ X0\ X1\ X3))\ X2 = k1\_mesfunc9\ (k3\_mesfunc5\ X0\ (k4\_mesfunc9\ X0\ X1)\ X3)\ X2))))) \tag{4}$$

Assume the following.

$$m1\_subset\_1\ k1\_xboole\_0\ k4\_ordinal1 \tag{5}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers))))))\Rightarrow (\forall X2.(m1\_subset\_1\ X2\ X0)\Rightarrow(r1\_funct\_2\ k5\_numbers\ k1\_numbers\ k5\_numbers\ k7\_numbers\ (k10\_seqfunc\ X0\ X1\ X2)\ (k3\_mesfunc5\ X0\ (k1\_mesfun7c\ X0\ X1)\ X2)))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X2)\wedge ((v1\_funct\_2\ X2\ X0\ X1)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))))\wedge((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ X0\ X1)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))))\Rightarrow((r2\_funct\_2\ X0\ X1\ X2\ X3)\Leftrightarrow(X2 = X3)) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.\ ((\neg v1\_xboole\_0\ X1)\wedge((\neg v1\_xboole\_0\ X3)\wedge(((v1\_funct\_1\ X4)\wedge((v1\_funct\_2\ X4\ X0\ X1)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))))\wedge((v1\_funct\_1\ X5)\wedge((v1\_funct\_2\ X5\ X2\ X3)\wedge(m1\_subset\_1\ X5\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X2\ X3))))))))\Rightarrow((r1\_funct\_2\ X0\ X1\ X2\ X3\ X4\ X5)\Leftrightarrow(X4 = X5)) \tag{8}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{9}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X2)\wedge ((v1\_funct\_2\ X2\ k5\_numbers\ (k3\_rfunct\_3\ X0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k3\_rfunct\_3\ X0\ X1))))))\wedge (v7\_ordinal1\ X3))\Rightarrow(k4\_mesfunc5\ X0\ X1\ X2\ X3 = k1\_funct\_1\ X2\ X3) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.k3\_rfunct\_3\ X0\ X1 = k4\_partfun1\ X0\ X1 \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v3\_valued\_0\ X0)))\Rightarrow(k1\_seq\_1\ X0\ X1 = k1\_funct\_1\ X0\ X1) \tag{13}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v2\_valued\_0\ X0)))\Rightarrow(k1\_mesfunc9\ X0\ X1 = k1\_funct\_1\ X0\ X1) \tag{14}$$

Assume the following.

$$(\neg v1\_xboole\_0\ k4\_ordinal1)\wedge(v3\_ordinal1\ k4\_ordinal1) \tag{15}$$

Assume the following.

$$\neg v1\_xboole\_0\ k7\_numbers \tag{16}$$

Assume the following.

$$v3\_membered\ k1\_numbers \tag{17}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers))\wedge((v1\_mesfunc8\ X1\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers))))))))\Rightarrow((v1\_funct\_1\ (k1\_mesfun7c\ X0\ X1))\wedge((v1\_funct\_2\ (k1\_mesfun7c\ X0\ X1)\ k5\_numbers\ (k4\_partfun1\ X0\ k7\_numbers))\wedge(v1\_mesfunc8\ (k1\_mesfun7c\ X0\ X1)\ X0\ k7\_numbers))) \tag{18}$$

Assume the following.

$$\neg v1\_xboole\_0\ k1\_numbers \tag{19}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))))\Rightarrow((v1\_funct\_1\ (k1\_mesfunc5\ X0\ X1))\wedge(v1\_partfun1\ (k1\_mesfunc5\ X0\ X1)\ X0)) \tag{20}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ (k4\_partfun1\ X0\ k7\_numbers))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ k7\_numbers)))))))\Rightarrow((v1\_funct\_1\ (k4\_mesfunc9\ X0\ X1))\wedge((v1\_funct\_2\ (k4\_mesfunc9\ X0\ X1)\ k5\_numbers\ (k4\_partfun1\ X0\ k7\_numbers))\wedge(m1\_subset\_1\ (k4\_mesfunc9\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ k7\_numbers))))) \tag{21}$$

Assume the following.

$$\forall X0.((v1\_funct\_1\ X0)\wedge((v1\_funct\_2\ X0\ k5\_numbers\ k1\_numbers)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers)))))\Rightarrow((v1\_funct\_1\ (k3\_series\_1\ X0))\wedge((v1\_funct\_2\ (k3\_series\_1\ X0)\ k5\_numbers\ k1\_numbers)\wedge(m1\_subset\_1\ (k3\_series\_1\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers))))) \tag{22}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge(((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ (k4\_partfun1\ X0\ k7\_numbers))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ k7\_numbers))))))\wedge(m1\_subset\_1\ X2\ X0)))\Rightarrow((v1\_funct\_1\ (k3\_mesfunc5\ X0\ X1\ X2))\wedge((v1\_funct\_2\ (k3\_mesfunc5\ X0\ X1\ X2)\ k5\_numbers\ k7\_numbers)\wedge(m1\_subset\_1\ (k3\_mesfunc5\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k7\_numbers))))) \tag{23}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v2\_valued\_0\ X0)))\Rightarrow((v1\_funct\_1\ (k2\_mesfunc9\ X0))\wedge((v1\_funct\_2\ (k2\_mesfunc9\ X0)\ k5\_numbers\ k7\_numbers)\wedge(m1\_subset\_1\ (k2\_mesfunc9\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k7\_numbers))))) \tag{24}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers)))))))\Rightarrow((v1\_funct\_1\ (k2\_mesfun9c\ X0\ X1))\wedge((v1\_funct\_2\ (k2\_mesfun9c\ X0\ X1)\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers))\wedge(m1\_subset\_1\ (k2\_mesfun9c\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers))))))) \tag{25}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers)))))\Rightarrow((v1\_funct\_1\ (k1\_mesfunc5\ X0\ X1))\wedge(m1\_subset\_1\ (k1\_mesfunc5\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k7\_numbers)))) \tag{26}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers)))))))\Rightarrow((v1\_funct\_1\ (k1\_mesfun7c\ X0\ X1))\wedge((v1\_funct\_2\ (k1\_mesfun7c\ X0\ X1)\ k5\_numbers\ (k4\_partfun1\ X0\ k7\_numbers))\wedge(m1\_subset\_1\ (k1\_mesfun7c\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ k7\_numbers))))))) \tag{27}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge(((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers))))))\wedge(m1\_subset\_1\ X2\ X0)))\Rightarrow((v1\_funct\_1\ (k10\_seqfunc\ X0\ X1\ X2))\wedge((v1\_funct\_2\ (k10\_seqfunc\ X0\ X1\ X2)\ k5\_numbers\ k1\_numbers)\wedge(m1\_subset\_1\ (k10\_seqfunc\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers))))) \tag{28}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))\Rightarrow(k1\_mesfunc5\ X0\ X1 = X1)) \tag{29}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers)))))))\Rightarrow(k1\_mesfun7c\ X0\ X1 = X1)) \tag{30}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k4\_ordinal1)\Rightarrow(v7\_ordinal1\ X0) \tag{31}$$

Assume the following.

$$\forall X0.(v3\_membered\ X0)\Rightarrow(v2\_membered\ X0) \tag{32}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(v1\_relat\_1\ X2) \tag{33}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow((v1\_partfun1\ X2\ X0)\Rightarrow(v1\_funct\_2\ X2\ X0\ X1)) \tag{34}$$

Assume the following.

$$\forall X0.\forall X1.(v3\_membered\ X1)\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(v3\_valued\_0\ X2)) \tag{35}$$

Assume the following.

$$\forall X0.\forall X1.(v2\_membered\ X1)\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(v2\_valued\_0\ X2)) \tag{36}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers))))))\Rightarrow(\forall X2.(v7\_ordinal1\ X2)\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ X0)\Rightarrow(\forall X4.((v1\_mesfunc8\ X1\ X0\ k1\_numbers)\wedge((r1\_tarski\ X4\ (k1\_relset\_1\ X0\ (k4\_mesfunc5\ X0\ k1\_numbers\ X1\ k6\_numbers)))\wedge(X3\in X4)))\Rightarrow(k1\_seq\_1\ (k3\_series\_1\ (k10\_seqfunc\ X0\ X1\ X3))\ X2 = k1\_seq\_1\ (k10\_seqfunc\ X0\ (k2\_mesfun9c\ X0\ X1)\ X3)\ X2)))))$$