

# t16\_seqfunc (TMSRRW- CLUEMZvGFhS2bKuatySyfdpmDfPGp)

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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  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_seqfunc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_seqfunc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k54\_valued\_1 : \iota \Rightarrow \iota$  be given. Let  $k18\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_membered : \iota \Rightarrow o$  be given. Let  $k56\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $k20\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_seqfunc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \Rightarrow \\ & (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_valued\_0 \\ & X1)))) \Rightarrow (k54\_valued\_1 (k18\_valued\_1 X0 X1) = k18\_valued\_1 (k54\_valued\_1 \\ & X0) (k54\_valued\_1 X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((m1\_subset\_1 X2 \\ & (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1)))) \Rightarrow ((r2\_relset\_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \end{aligned} \tag{2}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1\_membered X1) \wedge ((v1\_funct\_1 \\ & X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow (k56\_valued\_1 \\ & X0 X1 X2 = k54\_valued\_1 X2) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3\_membered \\ & X1)\wedge((v3\_membered X2)\wedge(((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))))\wedge((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X2))))))\Rightarrow(k20\_valued\_1 X0 X1 X2 X3 X4 = k18\_valued\_1 \\ & X3 X4) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1 X2)\wedge \\ & ((v1\_funct\_2 X2 k5\_numbers (k4\_partfun1 X0 X1))\wedge(m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 X1))))))\wedge \\ & (v7\_ordinal1 X3))\Rightarrow(k1\_seqfunc X0 X1 X2 X3 = k1\_funct\_1 X2 X3) \end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v1\_funct\_1 X1)\wedge( \\ & (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k1\_numbers))\wedge(m1\_subset\_1 \\ & X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k1\_numbers))))))\Rightarrow \\ & (k5\_seqfunc X0 (k5\_seqfunc X0 X1) = k5\_seqfunc X0 X1) \end{aligned} \tag{7}$$

Assume the following.

$$v3\_membered k1\_numbers \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge(((v1\_funct\_1 \\ & X1)\wedge((v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k1\_numbers))\wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 \\ & X0 k1\_numbers))))))\wedge((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 k5\_numbers \\ & (k4\_partfun1 X0 k1\_numbers))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & k5\_numbers (k4\_partfun1 X0 k1\_numbers))))))\Rightarrow((v1\_funct\_1 \\ & (k8\_seqfunc X0 X1 X2))\wedge((v1\_funct\_2 (k8\_seqfunc X0 X1 X2) k5\_numbers \\ & (k4\_partfun1 X0 k1\_numbers))\wedge(m1\_subset\_1 (k8\_seqfunc X0 X1 X2) \\ & (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k1\_numbers)))))) \end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v1\_funct\_1 X1)\wedge( \\ & (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k1\_numbers))\wedge(m1\_subset\_1 \\ & X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k1\_numbers))))))\Rightarrow \\ & ((v1\_funct\_1 (k5\_seqfunc X0 X1))\wedge((v1\_funct\_2 (k5\_seqfunc X0 \\ & X1) k5\_numbers (k4\_partfun1 X0 k1\_numbers))\wedge(m1\_subset\_1 (k5\_seqfunc \\ & X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k1\_numbers)))))) \end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1\_membered\ X1)\wedge((v1\_funct\_1 \\ & X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))\Rightarrow((v1\_funct\_1 \\ & (k56\_valued\_1\ X0\ X1\ X2))\wedge(m1\_subset\_1\ (k56\_valued\_1\ X0\ X1\ X2)\ ( \\ & k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers)))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3\_membered \\ & X1)\wedge((v3\_membered\ X2)\wedge(((v1\_funct\_1\ X3)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1\ X0\ X1))))\wedge((v1\_funct\_1\ X4)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1\ X0\ X2))))))\Rightarrow((v1\_funct\_1\ (k20\_valued\_1\ X0\ X1\ X2 \\ & X3\ X4))\wedge(m1\_subset\_1\ (k20\_valued\_1\ X0\ X1\ X2\ X3\ X4)\ (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1\ X0\ k1\_numbers)))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X2)\wedge \\ & ((v1\_funct\_2\ X2\ k5\_numbers\ (k4\_partfun1\ X0\ X1))\wedge(m1\_subset\_1 \\ & X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ X1))))))\wedge \\ & (v7\_ordinal1\ X3))\Rightarrow((v1\_funct\_1\ (k1\_seqfunc\ X0\ X1\ X2\ X3))\wedge(m1\_subset\_1 \\ & (k1\_seqfunc\ X0\ X1\ X2\ X3)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge( \\ & (v1\_funct\_2\ X1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers))\wedge(m1\_subset\_1 \\ & X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers))))))\Rightarrow \\ & (\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ (k4\_partfun1 \\ & X0\ k1\_numbers))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers \\ & (k4\_partfun1\ X0\ k1\_numbers))))))\Rightarrow(\forall X3.((v1\_funct\_1\ X3)\wedge \\ & ((v1\_funct\_2\ X3\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers))\wedge(m1\_subset\_1 \\ & X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ k1\_numbers))))))\Rightarrow \\ & ((X3 = k8\_seqfunc\ X0\ X1\ X2)\Leftrightarrow(\forall X4.(v7\_ordinal1\ X4)\Rightarrow(r2\_relset\_1 \\ & X0\ k1\_numbers\ (k1\_seqfunc\ X0\ k1\_numbers\ X3\ X4)\ (k20\_valued\_1\ X0 \\ & k1\_numbers\ k1\_numbers\ (k1\_seqfunc\ X0\ k1\_numbers\ X1\ X4)\ (k1\_seqfunc \\ & X0\ k1\_numbers\ X2\ X4)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge \\
& (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k1\_numbers)) \wedge (m1\_subset\_1 \\
& X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k1\_numbers)))))) \Rightarrow \\
& (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 k5\_numbers (k4\_partfun1 \\
& X0 k1\_numbers)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers \\
& (k4\_partfun1 X0 k1\_numbers)))))) \Rightarrow ((X2 = k5\_seqfunc X0 X1) \Leftrightarrow (\forall X3. \\
& (v7\_ordinal1 X3) \Rightarrow (r2\_relset\_1 X0 k1\_numbers (k1\_seqfunc X0 k1\_numbers \\
& X2 X3) (k56\_valued\_1 X0 k1\_numbers (k1\_seqfunc X0 k1\_numbers X1 \\
& X3))))))
\end{aligned} \tag{15}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. ((v3\_membered \\
& X1) \wedge ((v3\_membered X2) \wedge ((v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1)))) \wedge ((v1\_funct\_1 X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X2)))))) \Rightarrow (k20\_valued\_1 X0 X1 X2 X3 X4 = k20\_valued\_1 \\
& X0 X1 X2 X4 X3)
\end{aligned} \tag{16}$$

Assume the following.

$$\forall X0. (v3\_membered X0) \Rightarrow (v1\_membered X0) \tag{17}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \tag{18}$$

Assume the following.

$$\forall X0. \forall X1. (v1\_membered X1) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_valued\_0 X2)) \tag{19}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge \\
& (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k1\_numbers)) \wedge (m1\_subset\_1 \\
& X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k1\_numbers)))))) \Rightarrow \\
& (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 k5\_numbers (k4\_partfun1 \\
& X0 k1\_numbers)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers \\
& (k4\_partfun1 X0 k1\_numbers)))))) \Rightarrow (r2\_relset\_1 k5\_numbers (k4\_partfun1 \\
& X0 k1\_numbers) (k5\_seqfunc X0 (k8\_seqfunc X0 X1 X2)) (k8\_seqfunc \\
& X0 (k5\_seqfunc X0 X1) (k5\_seqfunc X0 X2))))
\end{aligned}$$