

# t15\_seq\_1 (TMGVG- dUHDGtqc6MiH6sGXVpLN96M4DzwqsF)

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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  $k1\_numbers : \iota$  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  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k20\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $k1\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k18\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v1\_membered : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k1\_numbers) \wedge \\
 & (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
 & (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers k1\_numbers) \wedge \\
 & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
 & (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 k5\_numbers k1\_numbers) \wedge \\
 & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
 & ((r2\_funct\_2 k5\_numbers k1\_numbers X0 (k20\_valued\_1 k5\_numbers \\
 & k1\_numbers k1\_numbers X1 X2)) \Leftrightarrow (\forall X3.(m2\_subset\_1 X3 k1\_numbers \\
 & k5\_numbers) \Rightarrow (k1\_seq\_1 X0 X3 = k8\_real\_1 (k1\_seq\_1 X1 X3) (k1\_seq\_1 \\
 & X2 X3))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k1\_numbers) \wedge \\
& (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
& (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers k1\_numbers) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
& (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 k5\_numbers k1\_numbers) \wedge \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
& ((r2\_funct\_2 k5\_numbers k1\_numbers X0 (k3\_valued\_1 k5\_numbers \\
& k1\_numbers k1\_numbers X1 X2)) \Leftrightarrow (\forall X3.(m2\_subset\_1 X3 k1\_numbers \\
& k5\_numbers) \Rightarrow (k1\_seq\_1 X0 X3 = k7\_real\_1 (k1\_seq\_1 X1 X3) (k1\_seq\_1 \\
& X2 X3))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. ((v1\_xcmplx\_0 X0) \wedge ((v1\_xcmplx\_0 \\
& X1) \wedge (v1\_xcmplx\_0 X2))) \Rightarrow (k3\_xcmplx\_0 (k2\_xcmplx\_0 X0 X1) X2 = k2\_xcmplx\_0 \\
& (k3\_xcmplx\_0 X0 X2) (k3\_xcmplx\_0 X1 X2))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((v1\_funct\_1 X2) \wedge \\
& ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 X1)))))) \wedge ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X0 X1) \wedge (m1\_subset\_1 \\
& X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow (r2\_funct\_2 X0 X1 X2 X2)
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((m1\_subset\_1 X0 k1\_numbers) \wedge (v1\_xreal\_0 \\
& X1)) \Rightarrow (k8\_real\_1 X0 X1 = k3\_xcmplx\_0 X0 X1)
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((m1\_subset\_1 X0 k1\_numbers) \wedge (v1\_xreal\_0 \\
& X1)) \Rightarrow (k7\_real\_1 X0 X1 = k2\_xcmplx\_0 X0 X1)
\end{aligned} \tag{6}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. ((v3\_membered \\
& X1) \wedge ((v3\_membered X2) \wedge (((v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1)))))) \wedge ((v1\_funct\_1 X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X2)))))) \Rightarrow (k3\_valued\_1 X0 X1 X2 X3 X4 = k1\_valued\_1 \\
& X3 X4)
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3\_membered \\ & X1)\wedge((v3\_membered X2)\wedge(((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))))\wedge((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X2))))))\Rightarrow(k20\_valued\_1 X0 X1 X2 X3 X4 = k18\_valued\_1 \\ & X3 X4) \end{aligned} \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v3\_valued\_0 X0)))\Rightarrow(k1\_seq\_1 X0 X1 = k1\_funct\_1 X0 X1) \tag{10}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v1\_xboole\_0 \\ & X1)\wedge(v3\_membered X1))\wedge(((\neg v1\_xboole\_0 X2)\wedge(v3\_membered X2))\wedge \\ & (((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 X0 X1)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))))\wedge((v1\_funct\_1 X4)\wedge((v1\_funct\_2 X4 X0 X2)\wedge \\ & (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X2))))))))\Rightarrow((v1\_funct\_1 \\ & (k1\_valued\_1 X3 X4))\wedge(v1\_partfun1 (k1\_valued\_1 X3 X4) X0)) \end{aligned} \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v3\_valued\_0 X0)))\Rightarrow(v1\_xreal\_0 (k1\_funct\_1 X0 X1)) \tag{12}$$

Assume the following.

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

Assume the following.

$$v3\_membered k1\_numbers \tag{14}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v1\_xboole\_0 \\ & X1)\wedge(v3\_membered X1))\wedge(((\neg v1\_xboole\_0 X2)\wedge(v3\_membered X2))\wedge \\ & (((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 X0 X1)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))))\wedge((v1\_funct\_1 X4)\wedge((v1\_funct\_2 X4 X0 X2)\wedge \\ & (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X2))))))))\Rightarrow((v1\_funct\_1 \\ & (k18\_valued\_1 X3 X4))\wedge(v1\_partfun1 (k18\_valued\_1 X3 X4) X0)) \end{aligned} \tag{15}$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \tag{16}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3\_membered \\ & X1)\wedge((v3\_membered X2)\wedge(((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))))\wedge((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X2))))))\Rightarrow((v1\_funct\_1 (k3\_valued\_1 X0 X1 X2 X3 \\ & X4)\wedge(m1\_subset\_1 (k3\_valued\_1 X0 X1 X2 X3 X4) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 k1\_numbers)))))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3\_membered \\ & X1)\wedge((v3\_membered X2)\wedge(((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))))\wedge((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X2))))))\Rightarrow((v1\_funct\_1 (k20\_valued\_1 X0 X1 X2 \\ & X3 X4)\wedge(m1\_subset\_1 (k20\_valued\_1 X0 X1 X2 X3 X4) (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 k1\_numbers)))))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v3\_valued\_0 \\ & X0)))\Rightarrow(m1\_subset\_1 (k1\_seq\_1 X0 X1) k1\_numbers) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3\_membered \\ & X1)\wedge((v3\_membered X2)\wedge(((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))))\wedge((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X2))))))\Rightarrow(k3\_valued\_1 X0 X1 X2 X3 X4 = k3\_valued\_1 \\ & X0 X1 X2 X4 X3) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_valued\_0 \\ & X0)))\wedge((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_valued\_0 X1))))\Rightarrow \\ & (k1\_valued\_1 X0 X1 = k1\_valued\_1 X1 X0) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_valued\_0 \\ & X0)))\wedge((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_valued\_0 X1))))\Rightarrow \\ & (k18\_valued\_1 X0 X1 = k18\_valued\_1 X1 X0) \end{aligned} \quad (22)$$

Assume the following.

$$\forall X0.(v3\_membered X0)\Rightarrow(v1\_membered X0) \quad (23)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v1\_relat\_1 X2) \end{aligned} \quad (24)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1)))\Rightarrow((v1\_partfun1 X2 X0)\Rightarrow(v1\_funct\_2 X2 X0 X1)) \end{aligned} \quad (25)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(v3\_membered X1)\Rightarrow(\forall X2.(m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v3\_valued\_0 X2)) \end{aligned} \quad (26)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(v1\_membered X1)\Rightarrow(\forall X2.(m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v1\_valued\_0 X2)) \end{aligned} \quad (27)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v1\_funct\_1 X0)\wedge((v1\_funct\_2 X0 k5\_numbers k1\_numbers)\wedge \\ & (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers))))))\Rightarrow \\ & (\forall X1.((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 k5\_numbers k1\_numbers)\wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers))))))\Rightarrow \\ & (\forall X2.((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 k5\_numbers k1\_numbers)\wedge \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers))))))\Rightarrow \\ & (r2\_funct\_2 k5\_numbers k1\_numbers (k20\_valued\_1 k5\_numbers k1\_numbers \\ & k1\_numbers (k3\_valued\_1 k5\_numbers k1\_numbers k1\_numbers X0 X1) \\ & X2) (k3\_valued\_1 k5\_numbers k1\_numbers k1\_numbers (k20\_valued\_1 \\ & k5\_numbers k1\_numbers k1\_numbers X0 X2) (k20\_valued\_1 k5\_numbers \\ & k1\_numbers k1\_numbers X1 X2)))) \end{aligned}$$