

# t17\_functor0 (TMSKE- vAZqcL3LwE4wsvSSbMFxMbuGiGQK8N)

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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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m2\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. (\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2. ((v1\_funct\_1 \\
 & X2) \wedge ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
 & X0 X1)))))) \Rightarrow (\forall X3. ((v1\_relat\_1 X3) \wedge ((v4\_relat\_1 X3 X1) \wedge \\
 & ((v1\_funct\_1 X3) \wedge (v1\_partfun1 X3 X1)))))) \Rightarrow (\forall X4. ((v1\_relat\_1 \\
 & X4) \wedge ((v4\_relat\_1 X4 X1) \wedge ((v1\_funct\_1 X4) \wedge (v1\_partfun1 X4 X1)))))) \Rightarrow \\
 & (\forall X5. (m2\_pboole X5 X1 X3 X4) \Rightarrow (m2\_pboole (k3\_relat\_1 X2 X5) \\
 & X0 (k3\_relat\_1 X2 X3) (k3\_relat\_1 X2 X4))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. (v1\_relat\_1 X0) \Rightarrow (\forall X1. (v1\_relat\_1 X1) \Rightarrow (\forall X2. \\
 & (v1\_relat\_1 X2) \Rightarrow (k3\_relat\_1 (k3\_relat\_1 X0 X1) X2 = k3\_relat\_1 \\
 & X0 (k3\_relat\_1 X1 X2))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
 & (((v1\_funct\_1 X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
 & X0 X1)))) \wedge ((v1\_funct\_1 X5) \wedge (m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
 & X2 X3)))))) \Rightarrow (k1\_partfun1 X0 X1 X2 X3 X4 X5 = k3\_relat\_1 X4 X5)
 \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0 \\ & X1)\wedge(((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 X0 X1)\wedge(m1\_subset\_1 X3 \\ & (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\wedge((v1\_funct\_1 X4)\wedge((v1\_funct\_2 \\ & X4 X1 X2)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X2))))))\Rightarrow \\ & ((v1\_funct\_1 (k3\_relat\_1 X3 X4))\wedge(v1\_funct\_2 (k3\_relat\_1 X3 X4) \\ & X0 X2)) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge(v1\_funct\_1 X0))\wedge(( \\ & v1\_relat\_1 X1)\wedge(v1\_funct\_1 X1)))\Rightarrow((v1\_relat\_1 (k3\_relat\_1 X0 \\ & X1))\wedge(v1\_funct\_1 (k3\_relat\_1 X0 X1))) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X1)\wedge \\ & (((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))))))\wedge((v1\_relat\_1 X3)\wedge((v4\_relat\_1 X3 X1)\wedge \\ & ((v1\_funct\_1 X3)\wedge(v1\_partfun1 X3 X1))))))\Rightarrow((v1\_relat\_1 (k3\_relat\_1 \\ & X2 X3))\wedge((v4\_relat\_1 (k3\_relat\_1 X2 X3) X0)\wedge((v1\_funct\_1 (k3\_relat\_1 \\ & X2 X3))\wedge(v1\_partfun1 (k3\_relat\_1 X2 X3) X0)))) \end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((v1\_funct\_1 \\ & X2)\wedge((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X1))))))\wedge(((v1\_relat\_1 X3)\wedge((v4\_relat\_1 X3 X0)\wedge((v1\_funct\_1 \\ & X3)\wedge(v1\_partfun1 X3 X0))))\wedge((v1\_relat\_1 X4)\wedge((v4\_relat\_1 X4 \\ & X1)\wedge((v1\_funct\_1 X4)\wedge(v1\_partfun1 X4 X1))))))\Rightarrow(\forall X5.( \\ & m1\_functor0 X5 X0 X1 X2 X3 X4)\Rightarrow((v1\_relat\_1 X5)\wedge((v4\_relat\_1 X5 \\ & X0)\wedge((v1\_funct\_1 X5)\wedge(v1\_partfun1 X5 X0)))) \end{aligned} \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.v1\_relat\_1 (k3\_relat\_1 X0 X1) \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & (((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X1))))\wedge((v1\_funct\_1 X5)\wedge(m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X2 X3))))))\Rightarrow((v1\_funct\_1 (k1\_partfun1 X0 X1 X2 X3 X4 X5))\wedge(m1\_subset\_1 \\ & (k1\_partfun1 X0 X1 X2 X3 X4 X5) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X3)))) \end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2. ((v1\_funct\_1 \\
& X2) \wedge ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 X1)))))) \Rightarrow (\forall X3. ((v1\_relat\_1 X3) \wedge ((v4\_relat\_1 X3 X0) \wedge \\
& ((v1\_funct\_1 X3) \wedge (v1\_partfun1 X3 X0)))))) \Rightarrow (\forall X4. ((v1\_relat\_1 \\
& X4) \wedge ((v4\_relat\_1 X4 X1) \wedge ((v1\_funct\_1 X4) \wedge (v1\_partfun1 X4 X1)))))) \Rightarrow \\
& (\forall X5. ((v1\_relat\_1 X5) \wedge ((v4\_relat\_1 X5 X0) \wedge ((v1\_funct\_1 \\
& X5) \wedge (v1\_partfun1 X5 X0)))))) \Rightarrow ((m1\_functor0 X5 X0 X1 X2 X3 X4) \Leftrightarrow (m2\_pboole \\
& X5 X0 X3 (k3\_relat\_1 X2 X4))))))
\end{aligned} \tag{10}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \tag{11}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0. \forall X1. (\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2. (\neg v1\_xboole\_0 \\
& X2) \Rightarrow (\forall X3. ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X0 X1) \wedge (m1\_subset\_1 \\
& X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow (\forall X4. ((v1\_funct\_1 \\
& X4) \wedge ((v1\_funct\_2 X4 X1 X2) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X1 X2)))))) \Rightarrow (\forall X5. ((v1\_relat\_1 X5) \wedge ((v4\_relat\_1 X5 X1) \wedge \\
& ((v1\_funct\_1 X5) \wedge (v1\_partfun1 X5 X1)))))) \Rightarrow (\forall X6. ((v1\_relat\_1 \\
& X6) \wedge ((v4\_relat\_1 X6 X2) \wedge ((v1\_funct\_1 X6) \wedge (v1\_partfun1 X6 X2)))))) \Rightarrow \\
& (\forall X7. (m1\_functor0 X7 X1 X2 X4 X5 X6) \Rightarrow (m1\_functor0 (k3\_relat\_1 \\
& X3 X7) X0 X2 (k1\_partfun1 X0 X1 X1 X2 X3 X4) (k3\_relat\_1 X3 X5) X6))))))
\end{aligned}$$