

## t64\_funct\_3

(TMQoe4eEAEM9wDVys9vo9TJJfgimHtGTrUW)

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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  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k14\_funct\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_funct\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_funct\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k13\_funct\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2. (\neg v1\_xboole\_0 \\ & X2) \Rightarrow (\forall X3. ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X0 X1) \wedge (m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow (\forall X4. ((v1\_funct\_1 \\ & X4) \wedge ((v1\_funct\_2 X4 X0 X2) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X2)))))) \Rightarrow ((k3\_relat\_1 (k14\_funct\_3 X0 X1 X2 X3 X4) (k9\_funct\_3 \\ & X1 X2) = X3) \wedge (k3\_relat\_1 (k14\_funct\_3 X0 X1 X2 X3 X4) (k10\_funct\_3 \\ & X1 X2) = X4)))))) \end{aligned} \tag{1}$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. ((\neg v1\_xboole\_0 \\ & X1) \wedge ((\neg v1\_xboole\_0 X2) \wedge (((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X0 \\ & X1) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \wedge ((v1\_funct\_1 \\ & X4) \wedge ((v1\_funct\_2 X4 X0 X2) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X2)))))) \Rightarrow (k14\_funct\_3 X0 X1 X2 X3 X4 = k13\_funct\_3 X3 X4) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0 \\
& X1)\wedge((\neg v1\_xboole\_0 X2)\wedge(((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 X0 \\
& X1)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\wedge((v1\_funct\_1 \\
& X4)\wedge((v1\_funct\_2 X4 X0 X2)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 X2))))))\Rightarrow((v1\_funct\_1 (k14\_funct\_3 X0 X1 X2 X3 X4)\wedge((v1\_funct\_2 \\
& (k14\_funct\_3 X0 X1 X2 X3 X4) X0 (k2\_zfmisc\_1 X1 X2))\wedge(m1\_subset\_1 \\
& (k14\_funct\_3 X0 X1 X2 X3 X4) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 (k2\_zfmisc\_1 \\
& X1 X2))))))
\end{aligned} \tag{4}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.\forall X1.(\neg v1\_xboole\_0 X1)\Rightarrow(\forall X2.(\neg v1\_xboole\_0 \\
& X2)\Rightarrow(\forall X3.((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 X0 X1)\wedge(m1\_subset\_1 \\
& X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\Rightarrow(\forall X4.((v1\_funct\_1 \\
& X4)\wedge((v1\_funct\_2 X4 X0 X1)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 X1))))))\Rightarrow(\forall X5.((v1\_funct\_1 X5)\wedge((v1\_funct\_2 X5 X0 X2)\wedge \\
& (m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X2))))))\Rightarrow(\forall X6. \\
& ((v1\_funct\_1 X6)\wedge((v1\_funct\_2 X6 X0 X2)\wedge(m1\_subset\_1 X6 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X2))))))\Rightarrow((r2\_funct\_2 X0 (k2\_zfmisc\_1 X1 X2) (k14\_funct\_3 \\
& X0 X1 X2 X3 X5) (k14\_funct\_3 X0 X1 X2 X4 X6))\Rightarrow((r2\_funct\_2 X0 X1 X3 X4)\wedge \\
& (r2\_funct\_2 X0 X2 X5 X6))))))
\end{aligned}$$