

# t66\_funcop\_1 (TMMTBmxEs- rTTY7PuRF1m3Snnz2R5CYnYth5)

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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  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v3\_binop\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow \\ & (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 \\ & X0) X0) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X0) X0)))))) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X1 \\ & X0) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X0)))))) \Rightarrow (\forall X4. \\ & ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 X1 X0) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X1 X0)))))) \Rightarrow (\forall X5.((v1\_funct\_1 X5) \wedge ((v1\_funct\_2 \\ & X5 X1 X0) \wedge (m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X0)))))) \Rightarrow \\ & ((\forall X6.(m1\_subset\_1 X6 X1) \Rightarrow (k3\_funct\_2 X1 X0 X5 X6 = k5\_binop\_1 \\ & X0 X2 (k3\_funct\_2 X1 X0 X3 X6) (k3\_funct\_2 X1 X0 X4 X6))) \Rightarrow (r2\_funct\_2 \\ & X1 X0 X5 (k6\_funcop\_1 X0 X1 X2 X3 X4)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1 X2) \wedge \\ & ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X1)))))) \wedge ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X0 X1) \wedge (m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow ((r2\_funct\_2 X0 X1 X2 \\ & X3) \Leftrightarrow (X2 = X3)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\ & X1 (k2\_zfmisc\_1 X0 X0) X0) \wedge ((v3\_binop\_1 X1 X0) \wedge (m1\_subset\_1 X1 \\ & (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))))) \wedge (m1\_subset\_1 \\ & X2 X0)) \Rightarrow (k5\_binop\_1 X0 X1 X2 X2 = X2) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. ((\neg v1\_xboole\_0 \\ & X0) \wedge (((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 X0) X0) \wedge \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) \\ & X0)))))) \wedge (((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X1 X0) \wedge (m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X0)))))) \wedge ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 \\ & X4 X1 X0) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X0)))))) \Rightarrow \\ & ((v1\_funct\_1 (k6\_funcop\_1 X0 X1 X2 X3 X4) \wedge ((v1\_funct\_2 (k6\_funcop\_1 \\ & X0 X1 X2 X3 X4) X1 X0) \wedge (m1\_subset\_1 (k6\_funcop\_1 X0 X1 X2 X3 X4) (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X1 X0)))))) \end{aligned} \quad (5)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v1\_xboole\_0 X0) \Rightarrow (\forall X2. (m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_xboole\_0 X2)) \end{aligned} \quad (7)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. \forall X2. ((v1\_funct\_1 \\ & X2) \wedge ((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))))) \Rightarrow (\forall X3. ((v1\_funct\_1 \\ & X3) \wedge ((v1\_funct\_2 X3 X1 X0) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X1 X0)))))) \Rightarrow ((v3\_binop\_1 X2 X0) \Rightarrow (r2\_funct\_2 X1 X0 (k6\_funcop\_1 \\ & X0 X1 X2 X3 X3)))) \end{aligned}$$