

# t56\_seq\_4 (TMWwUiXQWaeP- BGFgJsf7XnDXm7iTCCZ6DPu)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_numbers : \iota$  be given. Let  $r7\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_seq\_4 : \iota \Rightarrow \iota$  be given. Let  $k27\_binop\_2 : \iota$  be given. Let  $r6\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k29\_binop\_2 : \iota$  be given. 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  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_partfun1 : \iota \Rightarrow \iota$  be given. Let  $k4\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$r6\_binop\_1 \ k2\_numbers \ k29\_binop\_2 \ k27\_binop\_2 \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1\_xboole\_0 \ X0) \Rightarrow (\forall X1. (m1\_subset\_1 \ X1 \ X0) \Rightarrow \\ & (\forall X2. ((v1\_funct\_1 \ X2) \wedge ((v1\_funct\_2 \ X2 \ (k2\_zfmisc\_1 \ X0 \\ & X0) \ X0) \wedge (m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k2\_zfmisc\_1 \\ & X0 \ X0) \ X0)))))) \Rightarrow (\forall X3. ((v1\_funct\_1 \ X3) \wedge ((v1\_funct\_2 \ X3 \ ( \\ & k2\_zfmisc\_1 \ X0 \ X0) \ X0) \wedge (m1\_subset\_1 \ X3 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \\ & (k2\_zfmisc\_1 \ X0 \ X0) \ X0)))))) \Rightarrow (\forall X4. ((v1\_funct\_1 \ X4) \wedge ((v1\_funct\_2 \\ & X4 \ X0 \ X0) \wedge (m1\_subset\_1 \ X4 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ X0 \ X0)))))) \Rightarrow \\ & (((r6\_binop\_1 \ X0 \ X2 \ X3) \wedge (r2\_funct\_2 \ X0 \ X0 \ X4 \ (k10\_funcop\_1 \ X0 \ X0 \\ & X2 \ X1 \ (k6\_partfun1 \ X0)))) \Rightarrow (r7\_binop\_1 \ X0 \ X4 \ X3)))) \end{aligned} \tag{2}$$

Assume the following.

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

Assume the following.

$$\forall X0.k6\_partfun1\ X0 = k4\_relat\_1\ X0 \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0 \\ & X0)\wedge(((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge \\ & (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0) \\ & X0))))))\wedge((m1\_subset\_1\ X3\ X0)\wedge((v1\_funct\_1\ X4)\wedge((v1\_funct\_2 \\ & X4\ X1\ X0)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ X0))))))\Rightarrow \\ & (k10\_funcop\_1\ X0\ X1\ X2\ X3\ X4 = k5\_funcop\_1\ X2\ X3\ X4) \end{aligned} \quad (5)$$

Assume the following.

$$\neg v1\_xboole\_0\ k2\_numbers \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_relat\_1\ (k4\_relat\_1\ X0))\wedge((v4\_relat\_1\ (k4\_relat\_1 \\ & X0)\ X0)\wedge((v1\_funct\_1\ (k4\_relat\_1\ X0))\wedge(v1\_partfun1\ (k4\_relat\_1 \\ & X0)\ X0))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xcmplx\_0\ X0)\Rightarrow((v1\_funct\_1\ (k7\_seq\_4\ X0))\wedge((v1\_funct\_2 \\ & (k7\_seq\_4\ X0)\ k2\_numbers\ k2\_numbers)\wedge(m1\_subset\_1\ (k7\_seq\_4 \\ & X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k2\_numbers\ k2\_numbers)))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_partfun1\ (k6\_partfun1\ X0)\ X0)\wedge(m1\_subset\_1\ (k6\_partfun1 \\ & X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & (v1\_funct\_1\ k29\_binop\_2)\wedge((v1\_funct\_2\ k29\_binop\_2\ (k2\_zfmisc\_1 \\ & k2\_numbers\ k2\_numbers)\ k2\_numbers)\wedge(m1\_subset\_1\ k29\_binop\_2 \\ & (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ k2\_numbers\ k2\_numbers) \\ & k2\_numbers)))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & (v1\_funct\_1\ k27\_binop\_2)\wedge((v1\_funct\_2\ k27\_binop\_2\ (k2\_zfmisc\_1 \\ & k2\_numbers\ k2\_numbers)\ k2\_numbers)\wedge(m1\_subset\_1\ k27\_binop\_2 \\ & (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ k2\_numbers\ k2\_numbers) \\ & k2\_numbers)))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xcmplx\_0\ X0)\Rightarrow(k7\_seq\_4\ X0 = k5\_funcop\_1\ k29\_binop\_2 \\ & X0\ (k6\_partfun1\ k2\_numbers)) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k2\_numbers) \Rightarrow (v1\_xcmplx\_0 X0) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow ((v1\_partfun1 X2 X0) \Rightarrow (v1\_funct\_2 X2 X0 X1)) \quad (14)$$

**Theorem 1**

$$\forall X0.(m1\_subset\_1 X0 k2\_numbers) \Rightarrow (r7\_binop\_1 k2\_numbers (k7\_seq\_4 X0) k27\_binop\_2)$$