

# t63\_bvfunc14 (TMTK- gYaL7PTcgHN8syDnR5JNwWjMyeq5qSb)

October 27, 2020

Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k16\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k4\_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k7\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
& \forall X6. \forall X7. ((v1\_relat\_1 X7) \wedge (v1\_funct\_1 X7)) \Rightarrow (\forall X8. \\
& \quad \forall X9. \forall X10. \forall X11. \forall X12. \forall X13. \forall X14. \\
& \quad (X7 = k1\_funct\_4 (k1\_funct\_4 (k1\_funct\_4 (k1\_funct\_4 (k1\_funct\_4 \\
& \quad (k1\_funct\_4 (k16\_funcop\_1 X1 X9) (k16\_funcop\_1 X2 X10)) (k16\_funcop\_1 \\
& \quad X3 X11)) (k16\_funcop\_1 X4 X12)) (k16\_funcop\_1 X5 X13)) (k16\_funcop\_1 \\
& \quad X6 X14)) (k16\_funcop\_1 X0 X8)) \Rightarrow (k9\_xtuple\_0 X7 = k5\_enumset1 X0 \\
& \quad X1 X2 X3 X4 X5 X6))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
& \forall X6. \forall X7. k6\_enumset1 X0 X1 X2 X3 X4 X5 X6 X7 = k2\_xboole\_0 \\
& \quad (k1\_tarski X0) (k5\_enumset1 X1 X2 X3 X4 X5 X6 X7)
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
& \forall X6. k5\_enumset1 X0 X1 X2 X3 X4 X5 X6 = k2\_xboole\_0 (k4\_enumset1 \\
& \quad X0 X1 X2 X3 X4 X5) (k1\_tarski X6)
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & \forall X6.k5\_enumset1\ X0\ X1\ X2\ X3\ X4\ X5\ X6 = k2\_xboole\_0\ (k1\_tarski \\ & \quad X0)\ (k4\_enumset1\ X1\ X2\ X3\ X4\ X5\ X6) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(k9\_xtuple\_0\ (k2\_funcop\_1\ X0\ X1) = X0) \wedge (r1\_tarski\ (k10\_xtuple\_0\ (k2\_funcop\_1\ X0\ X1))\ (k1\_tarski\ X1)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.k7\_funcop\_1\ X0\ X1 = k2\_funcop\_1\ X0\ X1 \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1\ (k16\_funcop\_1\ X0\ X1)) \wedge (v1\_funct\_1\ (k16\_funcop\_1\ X0\ X1)) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(v1\_funct\_1\ (k7\_funcop\_1\ X0\ X1)) \wedge ((v1\_funct\_2 \\ & (k7\_funcop\_1\ X0\ X1)\ X0\ (k1\_tarski\ X1)) \wedge (m1\_subset\_1\ (k7\_funcop\_1 \\ & \quad X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ (k1\_tarski\ X1)))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \wedge ((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1))) \Rightarrow ((v1\_relat\_1\ (k1\_funct\_4\ X0\ X1)) \wedge (v1\_funct\_1\ (k1\_funct\_4\ X0\ X1))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.k16\_funcop\_1\ X0\ X1 = k7\_funcop\_1\ (k1\_tarski\ X0)\ X1 \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.(((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow (\forall X1.(((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1)) \Rightarrow (\forall X2.(((v1\_relat\_1\ X2) \wedge \\ & (v1\_funct\_1\ X2)) \Rightarrow ((X2 = k1\_funct\_4\ X0\ X1) \Leftrightarrow ((k9\_xtuple\_0\ X2 = k2\_xboole\_0 \\ & \quad (k9\_xtuple\_0\ X0)\ (k9\_xtuple\_0\ X1)) \wedge (\forall X3.(X3 \in k2\_xboole\_0 \\ & \quad (k9\_xtuple\_0\ X0)\ (k9\_xtuple\_0\ X1)) \Rightarrow (((X3 \in k9\_xtuple\_0\ X1) \Rightarrow (k1\_funct\_1 \\ & \quad X2\ X3 = k1\_funct\_1\ X1\ X3)) \wedge ((\neg X3 \in k9\_xtuple\_0\ X1) \Rightarrow (k1\_funct\_1\ X2 \\ & \quad X3 = k1\_funct\_1\ X0\ X3)))))))))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0\ X0\ X1 = k2\_xboole\_0\ X1\ X0 \quad (12)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & \forall X6.\forall X7.\forall X8.((v1\_relat\_1 X8)\wedge(v1\_funct\_1 \\ & X8))\Rightarrow(\forall X9.\forall X10.\forall X11.\forall X12.\forall X13. \\ & \forall X14.\forall X15.\forall X16.(X8 = k1\_funct\_4 (k1\_funct\_4 \\ & (k1\_funct\_4 (k1\_funct\_4 (k1\_funct\_4 (k1\_funct\_4 \\ & (k16\_funcop\_1 X1 X10) (k16\_funcop\_1 X2 X11)) (k16\_funcop\_1 X3 X12)) \\ & (k16\_funcop\_1 X4 X13)) (k16\_funcop\_1 X5 X14)) (k16\_funcop\_1 X6 \\ & X15)) (k16\_funcop\_1 X7 X16)) (k16\_funcop\_1 X0 X9))\Rightarrow(k9\_xtuple\_0 \\ & X8 = k6\_enumset1 X0 X1 X2 X3 X4 X5 X6 X7)) \end{aligned}$$