

## t10\_bvfunc\_3

(TMRtpi52GssEfHkbv43whY6Q3k7eKnrzf6P)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_bvfunc\_2 : \iota \Rightarrow \iota$  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  $k6\_margrel1 : \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_bvfunc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_bvfunc\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_bvfunc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_bvfunc\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
 & \quad (k1\_bvfunc\_2 X0))) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\
 & \quad X2 X0 k6\_margrel1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
 & \quad X0 k6\_margrel1)))))) \Rightarrow (\forall X3. ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 \\
 & \quad X3 X0 k6\_margrel1) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
 & \quad X0 k6\_margrel1)))))) \Rightarrow (\forall X4. (m1\_eqrel\_1 X4 X0) \Rightarrow (r1\_bvfunc\_1 \\
 & \quad X0 (k6\_bvfunc\_2 X0 (k5\_bvfunc\_1 X0 X2 X3) X1 X4) (k5\_bvfunc\_1 X0 ( \\
 & \quad k6\_bvfunc\_2 X0 X2 X1 X4) (k7\_bvfunc\_2 X0 X3 X1 X4))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 X0) \wedge \\
 & \quad (((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 X0 k6\_margrel1) \wedge (m1\_subset\_1 \\
 & \quad X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1)))))) \wedge ((m1\_subset\_1 \\
 & \quad X2 (k1\_zfmisc\_1 (k1\_bvfunc\_2 X0))) \wedge (m1\_eqrel\_1 X3 X0))) \Rightarrow ((v1\_funct\_1 \\
 & \quad (k7\_bvfunc\_2 X0 X1 X2 X3) \wedge ((v1\_funct\_2 (k7\_bvfunc\_2 X0 X1 X2 X3) \\
 & \quad X0 k6\_margrel1) \wedge (m1\_subset\_1 (k7\_bvfunc\_2 X0 X1 X2 X3) (k1\_zfmisc\_1 \\
 & \quad (k2\_zfmisc\_1 X0 k6\_margrel1))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge \\
& ((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 X0 k6\_margrel1)\wedge(m1\_subset\_1 \\
& X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1))))))\wedge((m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 (k1\_bvfunc\_2 X0)))\wedge(m1\_eqrel\_1 X3 X0)))\Rightarrow((v1\_funct\_1 \\
& (k6\_bvfunc\_2 X0 X1 X2 X3)\wedge((v1\_funct\_2 (k6\_bvfunc\_2 X0 X1 X2 X3) \\
& X0 k6\_margrel1)\wedge(m1\_subset\_1 (k6\_bvfunc\_2 X0 X1 X2 X3) (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 k6\_margrel1))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge(((v1\_funct\_1 \\
& X1)\wedge((v1\_funct\_2 X1 X0 k6\_margrel1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 k6\_margrel1))))))\wedge((v1\_funct\_1 X2)\wedge((v1\_funct\_2 \\
& X2 X0 k6\_margrel1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 k6\_margrel1)))))))\Rightarrow(k5\_bvfunc\_1 X0 X1 X2 = k5\_bvfunc\_1 X0 X2 \\
& X1)
\end{aligned} \tag{4}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
& (k1\_bvfunc\_2 X0)))\Rightarrow(\forall X2.((v1\_funct\_1 X2)\wedge((v1\_funct\_2 \\
& X2 X0 k6\_margrel1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 k6\_margrel1))))))\Rightarrow(\forall X3.((v1\_funct\_1 X3)\wedge((v1\_funct\_2 \\
& X3 X0 k6\_margrel1)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 k6\_margrel1))))))\Rightarrow(\forall X4.(m1\_eqrel\_1 X4 X0)\Rightarrow(r1\_bvfunc\_1 \\
& X0 (k6\_bvfunc\_2 X0 (k5\_bvfunc\_1 X0 X2 X3) X1 X4) (k5\_bvfunc\_1 X0 ( \\
& k7\_bvfunc\_2 X0 X2 X1 X4) (k6\_bvfunc\_2 X0 X3 X1 X4))))))
\end{aligned}$$