

# t8\_bvfunc\_7 (TMHcwVMMXtChNNiZZWkYDR- rZG8GkSmGc17w)

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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  $k6\_margrel1 : \iota$  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  $k9\_bvfunc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_bvfunc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_bvfunc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_bvfunc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\ (v1\_funct\_2 X1 X0 k6\_margrel1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 ( \\ k2\_zfmisc\_1 X0 k6\_margrel1)))))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge \\ ((v1\_funct\_2 X2 X0 k6\_margrel1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 k6\_margrel1)))))) \Rightarrow (r2\_funct\_2 X0 k6\_margrel1 \\ (k9\_bvfunc\_1 X0 X1 X2) (k5\_bvfunc\_1 X0 (k1\_bvfunc\_1 X0 X1) X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\ (v1\_funct\_2 X1 X0 k6\_margrel1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 ( \\ k2\_zfmisc\_1 X0 k6\_margrel1)))))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge \\ ((v1\_funct\_2 X2 X0 k6\_margrel1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 k6\_margrel1)))))) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge \\ ((v1\_funct\_2 X3 X0 k6\_margrel1) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 k6\_margrel1)))))) \Rightarrow (r2\_funct\_2 X0 k6\_margrel1 \\ (k9\_bvfunc\_1 X0 (k2\_bvfunc\_1 X0 X1 X2) X3) (k9\_bvfunc\_1 X0 X1 (k9\_bvfunc\_1 \\ X0 X2 X3)))))) \end{aligned} \quad (2)$$

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.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v1\_funct\_1 X1)\wedge(v1\_funct\_2 X1 X0 k6\_margrel1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1))))))\Rightarrow(k1\_bvfunc\_1 X0 (k1\_bvfunc\_1 X0 X1) = X1) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge(((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 X0 k6\_margrel1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1))))))\wedge((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 k6\_margrel1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1)))))))\Rightarrow((v1\_funct\_1 (k9\_bvfunc\_1 X0 X1 X2))\wedge(v1\_funct\_2 (k9\_bvfunc\_1 X0 X1 X2) X0 k6\_margrel1)\wedge(m1\_subset\_1 (k9\_bvfunc\_1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1)))))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge(((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 X0 k6\_margrel1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1))))))\wedge((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 k6\_margrel1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1)))))))\Rightarrow((v1\_funct\_1 (k5\_bvfunc\_1 X0 X1 X2))\wedge(v1\_funct\_2 (k5\_bvfunc\_1 X0 X1 X2) X0 k6\_margrel1)\wedge(m1\_subset\_1 (k5\_bvfunc\_1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1)))))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v1\_funct\_1 X1)\wedge(v1\_funct\_2 X1 X0 k6\_margrel1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1))))))\Rightarrow((v1\_funct\_1 (k1\_bvfunc\_1 X0 X1))\wedge((v1\_funct\_2 (k1\_bvfunc\_1 X0 X1) X0 k6\_margrel1)\wedge(m1\_subset\_1 (k1\_bvfunc\_1 X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1)))))) \quad (7)$$

**Theorem 1**

$$\forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.((v1\_funct\_1 X1)\wedge(v1\_funct\_2 X1 X0 k6\_margrel1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1)))))\Rightarrow(\forall X2.((v1\_funct\_1 X2)\wedge(v1\_funct\_2 X2 X0 k6\_margrel1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1)))))\Rightarrow(\forall X3.((v1\_funct\_1 X3)\wedge(v1\_funct\_2 X3 X0 k6\_margrel1)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1)))))\Rightarrow(r2\_funct\_2 X0 k6\_margrel1 (k9\_bvfunc\_1 X0 (k2\_bvfunc\_1 X0 X1 X2) X3) (k9\_bvfunc\_1 X0 X1 (k5\_bvfunc\_1 X0 (k1\_bvfunc\_1 X0 X2) X3))))))$$