

## t25\_bvfunc\_3

(TMcauFbHaLWbBjz9wsn9t7xUnVDdTSadr)

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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  $k9\_bvfunc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_bvfunc\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_bvfunc\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_partit1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
 & \quad (k1\_bvfunc\_2 X0))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\
 & \quad X2 X0 k6\_margrel1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
 & \quad X0 k6\_margrel1)))))) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 \\
 & \quad X3 X0 k6\_margrel1) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
 & \quad X0 k6\_margrel1)))))) \Rightarrow (\forall X4.(m1\_eqrel\_1 X4 X0) \Rightarrow (r2\_funct\_2 \\
 & \quad X0 k6\_margrel1 (k9\_bvfunc\_1 X0 (k6\_bvfunc\_2 X0 X2 X1 X4) (k7\_bvfunc\_2 \\
 & \quad X0 X3 X1 X4)) (k7\_bvfunc\_2 X0 (k9\_bvfunc\_1 X0 X2 X3) X1 X4))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
 & \quad (k1\_partit1 X0))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\
 & \quad X2 X0 k6\_margrel1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
 & \quad X0 k6\_margrel1)))))) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 \\
 & \quad X3 X0 k6\_margrel1) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
 & \quad X0 k6\_margrel1)))))) \Rightarrow (\forall X4.(m1\_eqrel\_1 X4 X0) \Rightarrow (r1\_bvfunc\_1 \\
 & \quad X0 (k9\_bvfunc\_1 X0 (k7\_bvfunc\_2 X0 X2 X1 X4) (k7\_bvfunc\_2 X0 X3 X1 \\
 & \quad X4)) (k7\_bvfunc\_2 X0 (k9\_bvfunc\_1 X0 X2 X3) X1 X4))))))
 \end{aligned} \tag{2}$$

Assume the following.

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

Assume the following.

$$\forall X0.k1\_bvfunc\_2 X0 = k1\_partit1 X0 \quad (4)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge \\ & (((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 X0 k6\_margrel1)\wedge(m1\_subset\_1 \\ & X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1)))))\wedge((m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k1\_bvfunc\_2 X0)))\wedge(m1\_eqrel\_1 X3 X0))))\Rightarrow((v1\_funct\_1 \\ & (k7\_bvfunc\_2 X0 X1 X2 X3))\wedge((v1\_funct\_2 (k7\_bvfunc\_2 X0 X1 X2 X3) \\ & X0 k6\_margrel1)\wedge(m1\_subset\_1 (k7\_bvfunc\_2 X0 X1 X2 X3) (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 k6\_margrel1)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge \\ & (((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 X0 k6\_margrel1)\wedge(m1\_subset\_1 \\ & X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1)))))\wedge((m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k1\_bvfunc\_2 X0)))\wedge(m1\_eqrel\_1 X3 X0))))\Rightarrow((v1\_funct\_1 \\ & (k6\_bvfunc\_2 X0 X1 X2 X3))\wedge((v1\_funct\_2 (k6\_bvfunc\_2 X0 X1 X2 X3) \\ & X0 k6\_margrel1)\wedge(m1\_subset\_1 (k6\_bvfunc\_2 X0 X1 X2 X3) (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 k6\_margrel1)))))) \end{aligned} \quad (7)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & \quad (k1\_bfunc\_2 X0))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\ & \quad X2 X0 k6\_margrel1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & \quad X0 k6\_margrel1)))))) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 \\ & \quad X3 X0 k6\_margrel1) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & \quad X0 k6\_margrel1)))))) \Rightarrow (\forall X4.(m1\_eqrel\_1 X4 X0) \Rightarrow (r1\_bfunc\_1 \\ & \quad X0 (k9\_bfunc\_1 X0 (k7\_bfunc\_2 X0 X2 X1 X4) (k7\_bfunc\_2 X0 X3 X1 \\ & \quad X4) (k9\_bfunc\_1 X0 (k6\_bfunc\_2 X0 X2 X1 X4) (k7\_bfunc\_2 X0 X3 \\ & \quad X1 X4)))))) \end{aligned}$$