

## t29\_bvfunc\_1

(TMNg3nFK9zdGRvwPymehjSfo58j9uzLGhKa)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v3\_funct\_1 : \iota \Rightarrow o$  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  $r2\_bvfunc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_partit1 : \iota \Rightarrow \iota$  be given. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k11\_bvfunc\_1 : \iota \Rightarrow \iota$  be given. Let  $k12\_bvfunc\_1 : \iota \Rightarrow \iota$  be given. Let  $k8\_margrel1 : \iota$  be given. Let  $k2\_xboolean : \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_1 : \iota$  be given. Let  $k7\_margrel1 : \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (1)$$

Assume the following.

$$\forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge (v3\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 X0 k6\_margrel1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1)))))) \Rightarrow ((r2\_funct\_2 X0 k6\_margrel1 X1 (k11\_bvfunc\_1 X0)) \vee (r2\_funct\_2 X0 k6\_margrel1 X1 (k12\_bvfunc\_1 X0))) \quad (2)$$

Assume the following.

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

Assume the following.

$$k8\_margrel1 = k2\_xboolean \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge \\ & (((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))))))\wedge(m1\_subset\_1 X3 X0)))\Rightarrow(k3\_funct\_2 X0 \\ & X1 X2 X3 = k1\_funct\_1 X2 X3) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_eqrel\_1 X1 X0)\Rightarrow(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 X0))) \quad (6)$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(m1\_eqrel\_1 (k6\_partit1 X0) X0) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow((v1\_funct\_1 (k12\_bvfunc\_1 X0))\wedge \\ & ((v1\_funct\_2 (k12\_bvfunc\_1 X0) X0 k6\_margrel1)\wedge(m1\_subset\_1 \\ & (k12\_bvfunc\_1 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow((v1\_funct\_1 (k11\_bvfunc\_1 X0))\wedge \\ & ((v1\_funct\_2 (k11\_bvfunc\_1 X0) X0 k6\_margrel1)\wedge(m1\_subset\_1 \\ & (k11\_bvfunc\_1 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1)))))) \end{aligned} \quad (9)$$

Assume the following.

$$k2\_xboolean = np\_1 \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.((v1\_funct\_1 X1)\wedge( \\ & (v1\_funct\_2 X1 X0 k6\_margrel1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 ( \\ & k2\_zfmisc\_1 X0 k6\_margrel1))))))\Rightarrow(\forall X2.(m1\_eqrel\_1 X2 X0)\Rightarrow \\ & ((r2\_bvfunc\_1 X0 X1 X2)\Leftrightarrow(\forall X3.(X3 \in X2)\Rightarrow(\forall X4.\forall X5. \\ & ((X4 \in X3)\wedge(X5 \in X3))\Rightarrow(k1\_funct\_1 X1 X4 = k1\_funct\_1 X1 X5)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.((v1\_funct\_1 X1)\wedge( \\ & (v1\_funct\_2 X1 X0 k6\_margrel1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 ( \\ & k2\_zfmisc\_1 X0 k6\_margrel1))))))\Rightarrow((X1 = k12\_bvfunc\_1 X0)\Leftrightarrow(\forall X2. \\ & (m1\_subset\_1 X2 X0)\Rightarrow(k3\_funct\_2 X0 k6\_margrel1 X1 X2 = k8\_margrel1)))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.((v1\_funct\_1 X1)\wedge( \\ & (v1\_funct\_2 X1 X0 k6\_margrel1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 ( \\ & k2\_zfmisc\_1 X0 k6\_margrel1))))))\Rightarrow((X1 = k11\_bvfunc\_1 X0)\Leftrightarrow(\forall X2. \\ & (m1\_subset\_1 X2 X0)\Rightarrow(k3\_funct\_2 X0 k6\_margrel1 X1 X2 = k7\_margrel1)))) \end{aligned} \quad (13)$$

**Theorem 1**

$$\begin{aligned} \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge ( \\ (v3\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 X0 k6\_margrel1) \wedge (m1\_subset\_1 \\ X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k6\_margrel1)))))) \Rightarrow (r2\_bvfunc\_1 \\ X0 X1 (k6\_partit1 X0))) \end{aligned}$$