

## t18\_bvfunc\_2

(TMY5q1Ce816Ajk6vYwMo3R2V8KbzruGSuPk)

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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  $k1\_partit1 : \iota \Rightarrow \iota$  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  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_bvfunc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_bvfunc\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_bvfunc\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k16\_bvfunc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k17\_bvfunc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_bvfunc\_2 : \iota \Rightarrow \iota$  be given. Let  $k5\_bvfunc\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge \\ & (v1\_funct\_2 X1 X0 k6\_margrel1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 ( \\ & k2\_zfmisc\_1 X0 k6\_margrel1)))))) \Rightarrow (\forall X2. (m1\_eqrel\_1 X2 X0) \Rightarrow \\ & (r2\_funct\_2 X0 k6\_margrel1 (k1\_bvfunc\_1 X0 (k16\_bvfunc\_1 X0 X1 \\ & X2)) (k17\_bvfunc\_1 X0 (k1\_bvfunc\_1 X0 X1) X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. k1\_bvfunc\_2 X0 = k1\_partit1 X0 \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1\_xboole\_0 X0) \wedge ((m1\_eqrel\_1 \\ & X1 X0) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k1\_bvfunc\_2 X0)))))) \Rightarrow (m1\_eqrel\_1 \\ & (k5\_bvfunc\_2 X0 X1 X2) X0) \end{aligned} \quad (3)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\ (v1\_funct\_2 X1 X0 k6\_margrel1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 ( \\ k2\_zfmisc\_1 X0 k6\_margrel1)))))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\ (k1\_zfmisc\_1 (k1\_bvf\_func\_2 X0))) \Rightarrow (\forall X3.(m1\_eqrel\_1 X3 X0) \Rightarrow \\ (k6\_bvf\_func\_2 X0 X1 X2 X3 = k16\_bvf\_func\_1 X0 X1 (k5\_bvf\_func\_2 X0 X3 X2)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\ (v1\_funct\_2 X1 X0 k6\_margrel1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 ( \\ k2\_zfmisc\_1 X0 k6\_margrel1)))))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\ (k1\_zfmisc\_1 (k1\_bvf\_func\_2 X0))) \Rightarrow (\forall X3.(m1\_eqrel\_1 X3 X0) \Rightarrow \\ (k7\_bvf\_func\_2 X0 X1 X2 X3 = k17\_bvf\_func\_1 X0 X1 (k5\_bvf\_func\_2 X0 X3 X2)))))) \end{aligned} \quad (6)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (k1\_partit1 X0))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\ X2 X0 k6\_margrel1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ X0 k6\_margrel1)))))) \Rightarrow (\forall X3.(m1\_eqrel\_1 X3 X0) \Rightarrow (r2\_funct\_2 \\ X0 k6\_margrel1 (k1\_bvf\_func\_1 X0 (k6\_bvf\_func\_2 X0 X2 X1 X3)) (k7\_bvf\_func\_2 \\ X0 (k1\_bvf\_func\_1 X0 X2) X1 X3)))))) \end{aligned}$$