

# t37\_bvfunc\_3 (TMZJGFDEhYMGLgDRgUm- rBtBNaqKQHn2toNi)

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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  $k2\_bvfunc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_bvfunc\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_bvfunc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_bvfunc\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_bvfunc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
& \quad (k1\_bvfunc\_2 X0))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\
& \quad X2 X0 k6\_margrel1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad X0 k6\_margrel1)))))) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 \\
& \quad X3 X0 k6\_margrel1) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad X0 k6\_margrel1)))))) \Rightarrow (\forall X4.((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 \\
& \quad X4 X0 k6\_margrel1) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad X0 k6\_margrel1)))))) \Rightarrow (\forall X5.(m1\_eqrel\_1 X5 X0) \Rightarrow (r1\_bvfunc\_1 \\
& \quad X0 (k2\_bvfunc\_1 X0 (k6\_bvfunc\_2 X0 (k9\_bvfunc\_1 X0 X2 (k1\_bvfunc\_1 \\
& \quad X0 X3)) X1 X5) (k7\_bvfunc\_2 X0 (k2\_bvfunc\_1 X0 X4 X3) X1 X5)) (k7\_bvfunc\_2 \\
& \quad X0 (k2\_bvfunc\_1 X0 X4 (k1\_bvfunc\_1 X0 X2)) X1 X5))))))
\end{aligned} \tag{1}$$

Assume the following.

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

Assume the following.

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

**Theorem 1**

$$\begin{aligned} & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k1\_bvfunc\_2 X0))) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\ & X2 X0 k6\_margrel1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 k6\_margrel1)))))) \Rightarrow (\forall X3. ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 \\ & X3 X0 k6\_margrel1) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 k6\_margrel1)))))) \Rightarrow (\forall X4. ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 \\ & X4 X0 k6\_margrel1) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 k6\_margrel1)))))) \Rightarrow (\forall X5. (m1\_eqrel\_1 X5 X0) \Rightarrow (r1\_bvfunc\_1 \\ & X0 (k2\_bvfunc\_1 X0 (k6\_bvfunc\_2 X0 (k9\_bvfunc\_1 X0 X2 X3) X1 X5) ( \\ & k7\_bvfunc\_2 X0 (k2\_bvfunc\_1 X0 X4 (k1\_bvfunc\_1 X0 X3)) X1 X5)) (k7\_bvfunc\_2 \\ & X0 (k2\_bvfunc\_1 X0 X4 (k1\_bvfunc\_1 X0 X2)) X1 X5)))))) \end{aligned}$$