

# t9\_bvfunc\_5 (TMP- wmFsb8AfTMytZQkKLSa99iSbcCpBnTzD)

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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  $k12\_bvfunc\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_bvfunc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_margrel1 : \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge ( \\ & (v1\_funct\_2 X1 X0 k6\_margrel1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 ( \\ & k2\_zfmisc\_1 X0 k6\_margrel1)))))) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge \\ & ((v1\_funct\_2 X2 X0 k6\_margrel1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 k6\_margrel1)))))) \Rightarrow ((r2\_funct\_2 X0 k6\_margrel1 \\ & (k9\_bvfunc\_1 X0 X1 X2) (k12\_bvfunc\_1 X0)) \Leftrightarrow (r1\_bvfunc\_1 X0 X1 X2))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge ( \\ & (v1\_funct\_2 X1 X0 k6\_margrel1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 ( \\ & k2\_zfmisc\_1 X0 k6\_margrel1)))))) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge \\ & ((v1\_funct\_2 X2 X0 k6\_margrel1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 k6\_margrel1)))))) \Rightarrow ((r1\_bvfunc\_1 X0 X1 X2) \Leftrightarrow (\forall X3. \\ & (m1\_subset\_1 X3 X0) \Rightarrow ((k3\_funct\_2 X0 k6\_margrel1 X1 X3 = k8\_margrel1) \Rightarrow \\ & (k3\_funct\_2 X0 k6\_margrel1 X2 X3 = k8\_margrel1)))))) \end{aligned} \quad (2)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\ & (v1\_funct\_2 X1 X0 k6\_margrel1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 ( \\ & k2\_zfmisc\_1 X0 k6\_margrel1)))))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge \\ & ((v1\_funct\_2 X2 X0 k6\_margrel1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 k6\_margrel1)))))) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge \\ & ((v1\_funct\_2 X3 X0 k6\_margrel1) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 k6\_margrel1)))))) \Rightarrow (((r2\_funct\_2 X0 k6\_margrel1 \\ & (k9\_bvfunc\_1 X0 X1 X2) (k12\_bvfunc\_1 X0)) \wedge (r2\_funct\_2 X0 k6\_margrel1 \\ & (k9\_bvfunc\_1 X0 X2 X3) (k12\_bvfunc\_1 X0))) \Rightarrow (r2\_funct\_2 X0 k6\_margrel1 \\ & (k9\_bvfunc\_1 X0 X1 X3) (k12\_bvfunc\_1 X0)))))) \end{aligned}$$