

t30\_funct\_5 (TM-  
SrVUGMd9WTuzfT4q2SW3o7BNhXEUs9zfv)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_5 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow ((v1\_relat\_1 (k1\_funct\_5 X0)) \wedge (v1\_funct\_1 (k1\_funct\_5 X0))) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((X1 = k1\_funct\_5 X0) \Leftrightarrow ((k9\_xtuple\_0 X1 = k9\_xtuple\_0 (k9\_xtuple\_0 X0)) \wedge (\forall X2. \neg (X2 \in k9\_xtuple\_0 (k9\_xtuple\_0 X0)) \wedge (\forall X3. ((v1\_relat\_1 X3) \wedge (v1\_funct\_1 X3)) \Rightarrow (\neg (k1\_funct\_1 X1 X2 = X3) \wedge ((k9\_xtuple\_0 X3 = k10\_xtuple\_0 (k3\_xboole\_0 (k9\_xtuple\_0 X0) (k2\_zfmisc\_1 (k1\_tarski X2) (k10\_xtuple\_0 (k9\_xtuple\_0 X0)))))) \wedge (\forall X4. (X4 \in k9\_xtuple\_0 X3) \Rightarrow (k1\_funct\_1 X3 X4 = k1\_binop\_1 X0 X2 X4)))))))))) \end{aligned} \quad (2)$$

**Theorem 1**

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((X0 \in k9\_xtuple\_0 (k1\_funct\_5 X1)) \Rightarrow ((v1\_relat\_1 (k1\_funct\_1 (k1\_funct\_5 X1) X0)) \wedge (v1\_funct\_1 (k1\_funct\_1 (k1\_funct\_5 X1) X0))))$$