

## t23\_grfunc\_1

(TMWv8xcikpFD9qmmBL8cbNUeARZCXzrgXKG)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (k5\_relat\_1 X0 (k9\_xtuple\_0 X0) = X0) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(r1\_tarski X0 X1) \Leftrightarrow (\forall X2. \\ \forall X3.(k4\_tarski X2 X3 \in X0) \Rightarrow (k4\_tarski X2 X3 \in X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.\forall X2. \\ ((X1 \in k9\_xtuple\_0 X0) \Rightarrow ((X2 = k1\_funct\_1 X0 X1) \Leftrightarrow (k4\_tarski X1 X2 \in \\ X0))) \wedge ((\neg X1 \in k9\_xtuple\_0 X0) \Rightarrow ((X2 = k1\_funct\_1 X0 X1) \Leftrightarrow (X2 = k1\_xboole\_0)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_funct\_1 X0) \Leftrightarrow (\forall X1.\forall X2.\forall X3. \\ ((k4\_tarski X1 X2 \in X0) \wedge (k4\_tarski X1 X3 \in X0)) \Rightarrow (X2 = X3)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.\forall X2.(v1\_relat\_1 \\ X2) \Rightarrow ((X2 = k5\_relat\_1 X0 X1) \Leftrightarrow (\forall X3.\forall X4.(k4\_tarski \\ X3 X4 \in X2) \Leftrightarrow ((X3 \in X1) \wedge (k4\_tarski X3 X4 \in X0)))))) \end{aligned} \quad (5)$$

### Theorem 1

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((r1\_tarski X0 X1) \Rightarrow (k5\_relat\_1 \\ X1 (k9\_xtuple\_0 X0) = X0))) \end{aligned}$$