

# t32\_funct\_1

## (TMLe6AkwkiVcibaNrHL3DumvsYpjdMx6Hdp)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v2\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k2\_funct\_1 : \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow ((k10\_xtuple\_0 X0 = k9\_xtuple\_0 (k2\_relat\_1 X0)) \wedge (k9\_xtuple\_0 X0 = k10\_xtuple\_0 (k2\_relat\_1 X0))) \quad (1)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(v1\_relat\_1 X1) \Rightarrow ((X1 = k2\_relat\_1 X0) \Leftrightarrow (\forall X2.\forall X3.(k4\_tarski X2 X3 \in X1) \Leftrightarrow (k4\_tarski X3 X2 \in X0)))) \quad (2)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow ((v2\_funct\_1 X0) \Rightarrow (k2\_funct\_1 X0 = k2\_relat\_1 X0)) \quad (3)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.\forall X2. ((X1 \in k9\_xtuple\_0 X0) \Rightarrow ((X2 = k1\_funct\_1 X0 X1) \Leftrightarrow (k4\_tarski X1 X2 \in X0))) \wedge ((\neg X1 \in k9\_xtuple\_0 X0) \Rightarrow ((X2 = k1\_funct\_1 X0 X1) \Leftrightarrow (X2 = k1\_xboole\_0)))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k9\_xtuple\_0 X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (\exists X3.k4\_tarski X2 X3 \in X0)) \quad (5)$$

### Theorem 1

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow ((v2\_funct\_1 X0) \Rightarrow \\ & (\forall X1.((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((X1 = k2\_funct\_1 X0) \Leftrightarrow ((k9\_xtuple\_0 X1 = k10\_xtuple\_0 X0) \wedge (\forall X2.\forall X3. \\ & (((X2 \in k10\_xtuple\_0 X0) \wedge (X3 = k1\_funct\_1 X1 X2)) \Rightarrow ((X3 \in k9\_xtuple\_0 X0) \wedge (X2 = k1\_funct\_1 X0 X3))) \wedge (((X3 \in k9\_xtuple\_0 X0) \wedge (X2 = k1\_funct\_1 X0 X3)) \Rightarrow ((X2 \in k10\_xtuple\_0 X0) \wedge (X3 = k1\_funct\_1 X1 X2)))))))) \end{aligned}$$