t10_funct_4 (TM-NfNZHt8MKK5F17JVzvPhabvM5hZfc2qBB)

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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 $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k1\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.r1\_tarski\ X0\ (k2\_xboole\_0\ X0\ X1) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \wedge ((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1))) \Rightarrow ((v1\_relat\_1\ (k1\_funct\_4\ X0\ X1)) \wedge (v1\_funct\_1\ (k1\_funct\_4\ X0\ X1))) \tag{2}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1)) \Rightarrow (\forall X2.((v1\_relat\_1\ X2) \wedge (v1\_funct\_1\ X2)) \Rightarrow ((X2 = k1\_funct\_4\ X0\ X1) \Leftrightarrow ((k9\_xtuple\_0\ X2 = k2\_xboole\_0\ (k9\_xtuple\_0\ X0)\ (k9\_xtuple\_0\ X1)) \wedge (\forall X3.(X3 \in k2\_xboole\_0\ (k9\_xtuple\_0\ X0)\ (k9\_xtuple\_0\ X1)) \Rightarrow (((X3 \in k9\_xtuple\_0\ X1) \Rightarrow (k1\_funct\_1\ X2\ X3 = k1\_funct\_1\ X1\ X3)) \wedge ((\neg X3 \in k9\_xtuple\_0\ X1) \Rightarrow (k1\_funct\_1\ X2\ X3 = k1\_funct\_1\ X0\ X3)))))))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0\ X0\ X1 = k2\_xboole\_0\ X1\ X0 \tag{4}$$

Theorem 1

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1)) \Rightarrow ((r1\_tarski\ (k9\_xtuple\_0\ X0)\ (k9\_xtuple\_0\ (k1\_funct\_4\ X0\ X1))) \wedge (r1\_tarski\ (k9\_xtuple\_0\ X1)\ (k9\_xtuple\_0\ (k1\_funct\_4\ X0\ X1)))))$$