t10_funct_6 (TMP4DzxKEEjv5UFPDHPa13nubYiM1iatBEt)

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Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $k1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $k1\_funct\_5 : \iota \Rightarrow \iota$ be given. Let $k3\_funct\_5 : \iota \Rightarrow \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k10\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.(r1\_tarski\ X0\ X1) \Rightarrow (r1\_tarski\ (k1\_funct\_2\ X2\ X0)\ (k1\_funct\_2\ X2\ X1)) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_relat\_1\ X2) \wedge (v1\_funct\_1\ X2)) \Rightarrow ((k9\_xtuple\_0\ X2 = k2\_zfmisc\_1\ X0\ X1) \Rightarrow ((r1\_tarski\ (k10\_xtuple\_0\ (k1\_funct\_5\ X2))\ (k1\_funct\_2\ X1\ (k10\_xtuple\_0\ X2))) \wedge (r1\_tarski\ (k10\_xtuple\_0\ (k3\_funct\_5\ X2))\ (k1\_funct\_2\ X0\ (k10\_xtuple\_0\ X2))))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_relat\_1\ X2) \wedge (v1\_funct\_1\ X2)) \Rightarrow ((k9\_xtuple\_0\ X2 = k2\_zfmisc\_1\ X0\ X1) \Rightarrow ((k2\_zfmisc\_1\ X0\ X1 = k1\_xboole\_0) \vee ((k9\_xtuple\_0\ (k1\_funct\_5\ X2) = X0) \wedge (k9\_xtuple\_0\ (k3\_funct\_5\ X2) = X1)))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1\_tarski\ X0\ X1) \wedge (r1\_tarski\ X1\ X2)) \Rightarrow (r1\_tarski\ X0\ X2) \tag{4}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow ((v1\_relat\_1\ (k3\_funct\_5\ X0)) \wedge (v1\_funct\_1\ (k3\_funct\_5\ X0))) \tag{5}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow ((v1\_relat\_1\ (k1\_funct\_5\ X0)) \wedge (v1\_funct\_1\ (k1\_funct\_5\ X0))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k1\_funct\_2\ X0\ X1) \Leftrightarrow (\forall X3.\ (X3 \in X2) \Leftrightarrow (\exists X4.((v1\_relat\_1\ X4) \wedge (v1\_funct\_1\ X4)) \wedge ((X3 = X4) \wedge ((k9\_xtuple\_0\ X4 = X0) \wedge (r1\_tarski\ (k10\_xtuple\_0\ X4)\ X1))))) \quad (7)$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1\_relat\_1\ X3) \wedge (v1\_funct\_1\ X3)) \Rightarrow ((X3 \in k1\_funct\_2\ (k2\_zfmisc\_1\ X0\ X1)\ X2) \Rightarrow ((k2\_zfmisc\_1\ X0\ X1 = k1\_xboole\_0) \vee ((k1\_funct\_5\ X3 \in k1\_funct\_2\ X0\ (k1\_funct\_2\ X1\ X2)) \wedge (k3\_funct\_5\ X3 \in k1\_funct\_2\ X1\ (k1\_funct\_2\ X0\ X2)))))$$