t6_quaterni (TMX1FzSRTavztDcaamhWkuiBFk3wfLvsGsU)

October 27, 2020

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 $k2\_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_quaterni : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((X0 \neq X1) \Rightarrow (k1\_funct\_1\ (k4\_funct\_4\ X0\ X1\ X2\ X3)\ X0 = X2)) \wedge (k1\_funct\_1\ (k4\_funct\_4\ X0\ X1\ X2\ X3)\ X1 = X3) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(k9\_xtuple\_0\ (k4\_funct\_4\ X0\ X1\ X2\ X3) = k2\_tarski\ X0\ X1) \wedge (r1\_tarski\ (k10\_xtuple\_0\ (k4\_funct\_4\ X0\ X1\ X2\ X3))\ (k2\_tarski\ X2\ X3)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.k2\_enumset1\ X0\ X1\ X2\ X3 = k2\_xboole\_0\ (k2\_tarski\ X0\ X1)\ (k2\_tarski\ X2\ X3) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(v1\_relat\_1\ (k4\_funct\_4\ X0\ X1\ X2\ X3)) \wedge (v1\_funct\_1\ (k4\_funct\_4\ X0\ X1\ X2\ X3)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k2\_xboole\_0\ X0\ X1) \Leftrightarrow (\forall X3.\ (X3 \in X2) \Leftrightarrow ((X3 \in X0) \vee (X3 \in X1))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.\ \forall X6.\forall X7.k2\_quaterni\ X0\ X1\ X2\ X3\ X4\ X5\ X6\ X7 = k1\_funct\_4\ (k4\_funct\_4\ X0\ X1\ X4\ X5)\ (k4\_funct\_4\ X2\ X3\ X6\ X7) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k2\_tarski\ X0\ X1) \Leftrightarrow (\forall X3.\ (X3 \in X2) \Leftrightarrow ((X3 = X0) \vee (X3 = X1))) \tag{7}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1)) \Rightarrow (\forall X2.((v1\_relat\_1\ X2) \wedge (v1\_funct\_1\ X2)) \Rightarrow ((X2 = k1\_funct\_4\ X0\ X1) \Leftrightarrow ((k9\_xtuple\_0\ X2 = k2\_xboole\_0\ (k9\_xtuple\_0\ X0)\ (k9\_xtuple\_0\ X1)) \wedge (\forall X3.(X3 \in k2\_xboole\_0\ (k9\_xtuple\_0\ X0)\ (k9\_xtuple\_0\ X1)) \Rightarrow (((X3 \in k9\_xtuple\_0\ X1) \Rightarrow (k1\_funct\_1\ X2\ X3 = k1\_funct\_1\ X1\ X3)) \wedge ((\neg X3 \in k9\_xtuple\_0\ X1) \Rightarrow (k1\_funct\_1\ X2\ X3 = k1\_funct\_1\ X0\ X3)))))))) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.k2\_tarski\ X0\ X1 = k2\_tarski\ X1\ X0 \tag{9}$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.\ \forall X6.\forall X7.\forall X8.((v1\_relat\_1\ X8) \wedge (v1\_funct\_1\ X8)) \Rightarrow (((k9\_xtuple\_0\ X8 = k2\_enumset1\ X0\ X1\ X2\ X3) \wedge ((k1\_funct\_1\ X8\ X0 = X4) \wedge ((k1\_funct\_1\ X8\ X1 = X5) \wedge ((k1\_funct\_1\ X8\ X2 = X6) \wedge (k1\_funct\_1\ X8\ X3 = X7))))) \Rightarrow ((X0 = X1) \vee ((X2 = X3) \vee (X8 = k2\_quaterni\ X0\ X1\ X2\ X3\ X4\ X5\ X6\ X7))))$$