

t21\_topreal6  
(TMKssyH1viCT1D53TQx3Tz7dxRcjriuXQrY)

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Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_card\_3 : \iota \Rightarrow \iota$  be given. Let  $k4\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Assume the following.

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

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. (( \\ & v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (((k9\_xtuple\_0 X0 = k9\_xtuple\_0 \\ & X1) \wedge (\forall X2. (X2 \in k9\_xtuple\_0 X0) \Rightarrow (r1\_tarski (k1\_funct\_1 \\ & X0 X2) (k1\_funct\_1 X1 X2)))) \Rightarrow (r1\_tarski (k4\_card\_3 X0) (k4\_card\_3 \\ & X1)))) \end{aligned} \tag{3}$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (X2 = k2\_tarski X0 X1) \Leftrightarrow (\forall X3. \\ & (X3 \in X2) \Leftrightarrow ((X3 = X0) \vee (X3 = X1))) \end{aligned} \tag{5}$$

**Theorem 1**

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ ((r1\_tarski\ X0\ X1)\wedge(r1\_tarski\ X2\ X3))\Rightarrow(r1\_tarski\ (k4\_card\_3\ ( \\ k4\_funct\_4\ X4\ X5\ X0\ X2))\ (k4\_card\_3\ (k4\_funct\_4\ X4\ X5\ X1\ X3)))$$