

t15\_yellow20

(TMdYG6oykrmAv142QV7pvyFsCFHh4uSpN2q)

October 27, 2020

Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_yellow20 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_altcat\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. r1\_tarski (k3\_xboole\_0 X0 X1) X0 \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v4\_relat\_1 X1 X0)) \Rightarrow (k1\_relset\_1 X0 X1 = k9\_xtuple\_0 X1) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2. ((v1\_relat\_1 X2) \wedge (v1\_funct\_1 X2)) \Rightarrow ((X2 = k1\_yellow20 X0 X1) \Leftrightarrow ((k9\_xtuple\_0 X2 = k3\_xboole\_0 (k9\_xtuple\_0 X0) (k9\_xtuple\_0 X1)) \wedge (\forall X3. (X3 \in k3\_xboole\_0 (k9\_xtuple\_0 X0) (k9\_xtuple\_0 X1)) \Rightarrow (k1\_funct\_1 X2 X3 = k3\_xboole\_0 (k1\_funct\_1 X0 X3) (k1\_funct\_1 X1 X3))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v4\_relat\_1 X1 X0)) \Rightarrow (v1\_partfun1 X1 X0 \Leftrightarrow (k1\_relset\_1 X0 X1 = X0)) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. ((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 X0) \wedge ((v1\_funct\_1 X2) \wedge (v1\_partfun1 X2 X0)))) \Rightarrow (\forall X3. ((v1\_relat\_1 X3) \wedge ((v4\_relat\_1 X3 X1) \wedge ((v1\_funct\_1 X3) \wedge (v1\_partfun1 X3 X1)))) \Rightarrow ((r2\_altcat\_2 X0 X1 X2 X3) \Leftrightarrow ((r1\_tarski X0 X1) \wedge (\forall X4. (X4 \in X0) \Rightarrow (r1\_tarski (k1\_funct\_1 X2 X4) (k1\_funct\_1 X3 X4)))))) \end{aligned} \quad (5)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1\_relat\_1 X2)\wedge((v4\_relat\_1 \\ & X2 X0)\wedge((v1\_funct\_1 X2)\wedge(v1\_partfun1 X2 X0))))\Rightarrow(\forall X3.( \\ & (v1\_relat\_1 X3)\wedge(v1\_funct\_1 X3))\Rightarrow(\forall X4.((v1\_relat\_1 X4)\wedge \\ & ((v4\_relat\_1 X4 X1)\wedge((v1\_funct\_1 X4)\wedge(v1\_partfun1 X4 X1))))\Rightarrow \\ & ((X4 = k1\_yellow20 X2 X3)\Rightarrow(r2\_altcat\_2 X1 X0 X4 X2))) \end{aligned}$$