

t5\_topreal7 (TMJFE-  
gaBA3UCzm3vAbvVSoHsQAQSwpVBBrk)

October 27, 2020

Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k7\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & \quad (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ & \quad X1))) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 X2) \wedge (v1\_finseq\_1 \\ & \quad X2)))) \Rightarrow (((k7\_finseq\_1 X0 X1 = k7\_finseq\_1 X2 X1) \vee (k7\_finseq\_1 X1 \\ & \quad X0 = k7\_finseq\_1 X1 X2)) \Rightarrow (X0 = X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & \quad (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ & \quad X1))) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 X2) \wedge (v1\_finseq\_1 \\ & \quad X2)))) \Rightarrow (((r1\_tarski X0 X2) \wedge ((r1\_tarski X1 X2) \wedge (k3\_finseq\_1 X0 = \\ & \quad k3\_finseq\_1 X1))) \Rightarrow (X0 = X1)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & \quad (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ & \quad X1))) \Rightarrow (r1\_tarski X0 (k7\_finseq\_1 X0 X1))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 \\ & \quad X0))) \wedge ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1)))) \Rightarrow \\ & \quad ((v1\_relat\_1 (k7\_finseq\_1 X0 X1)) \wedge ((v1\_funct\_1 (k7\_finseq\_1 \\ & \quad X0 X1)) \wedge (v1\_finseq\_1 (k7\_finseq\_1 X0 X1)))) \end{aligned} \tag{4}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & \quad (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ & \quad X1))) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 X2) \wedge (v1\_finseq\_1 \\ & \quad X2))) \Rightarrow (\forall X3.((v1\_relat\_1 X3) \wedge ((v1\_funct\_1 X3) \wedge (v1\_finseq\_1 \\ & \quad X3)))) \Rightarrow (((k7\_finseq\_1 X0 X1 = k7\_finseq\_1 X2 X3) \wedge ((k3\_finseq\_1 \\ & \quad X0 = k3\_finseq\_1 X2) \wedge (k3\_finseq\_1 X1 = k3\_finseq\_1 X3))) \Rightarrow ((X0 = \\ & \quad X2) \wedge (X1 = X3)))))) \end{aligned}$$