

## t56\_xxreal\_1

(TMcd2fzKFAvMwEr8Y17UqRt5QXogKbULK55)

October 27, 2020

Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_xxreal\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xxreal\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xxreal\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xxreal\_0 X2) \Rightarrow (\forall X3.(v1\_xxreal\_0 X3) \Rightarrow ((r1\_tarski ( \\ & k4\_xxreal\_1 X0 X1) (k1\_xxreal\_1 X2 X3)) \Rightarrow ((r1\_xxreal\_0 X1 X0) \vee ( \\ & (r1\_xxreal\_0 X2 X0) \wedge (r1\_xxreal\_0 X1 X3))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2.(v1\_xxreal\_0 \\ & X2) \Rightarrow ((X0 \in k2\_xxreal\_1 X1 X2) \Rightarrow ((X0 \in k1\_xxreal\_1 X1 X2) \wedge (X0 \neq X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(r1\_tarski X0 X1) \Leftrightarrow (\forall X2.(X2 \in X0) \Rightarrow \\ & (X2 \in X1)) \end{aligned} \quad (3)$$

### Theorem 1

$$\begin{aligned} & \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xxreal\_0 X2) \Rightarrow (\forall X3.(v1\_xxreal\_0 X3) \Rightarrow ((r1\_tarski ( \\ & k4\_xxreal\_1 X0 X1) (k2\_xxreal\_1 X2 X3)) \Rightarrow ((r1\_xxreal\_0 X1 X0) \vee ( \\ & (r1\_xxreal\_0 X2 X0) \wedge (r1\_xxreal\_0 X1 X3))))))) \end{aligned}$$