

t22\_ordinal4  
(TMRtZarq7T7zaoAHpo57dDhtt6ELeKmZr7C)

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Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k12\_ordinal2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v5\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_ordinal2 : \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_ordinal2 : \iota \Rightarrow \iota$  be given. Let  $k1\_ordinal1 : \iota \Rightarrow \iota$  be given. Let  $k11\_ordinal2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_ordinal1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_ordinal2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(v3\_ordinal1 X0) \Rightarrow (\forall X1.(v3\_ordinal1 X1) \Rightarrow (( \\ v4\_ordinal1 X0) \Rightarrow ((X0 = k1\_xboole\_0) \vee (\forall X2.((v5\_ordinal1 \\ X2) \wedge ((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 X2) \wedge (v1\_ordinal2 X2)))) \Rightarrow \\ (((k9\_xtuple\_0 X2 = X0) \wedge (\forall X3.(v3\_ordinal1 X3) \Rightarrow ((X3 \in X0) \Rightarrow \\ (k1\_funct\_1 X2 X3 = k12\_ordinal2 X1 X3)))) \Rightarrow (k12\_ordinal2 X1 X0 = \\ k8\_ordinal2 X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.(v3\_ordinal1 X0) \Rightarrow (\forall X1.(v3\_ordinal1 X1) \Rightarrow (k12\_ordinal2 X0 (k1\_ordinal1 X1) = k11\_ordinal2 X0 (k12\_ordinal2 X0 X1))) \tag{2}$$

Assume the following.

$$\forall X0.(v3\_ordinal1 X0) \Rightarrow (k12\_ordinal2 X0 k1\_xboole\_0 = np\_1) \tag{3}$$

Assume the following.

$$\forall X0.(v3\_ordinal1 X0) \Rightarrow (\forall X1.(v3\_ordinal1 X1) \Rightarrow (\neg (k11\_ordinal2 X0 X1 = k1\_xboole\_0) \wedge ((X0 \neq k1\_xboole\_0) \wedge (X1 \neq k1\_xboole\_0)))) \tag{4}$$

Assume the following.

$$\neg v1\_xboole\_0 np\_1 \tag{5}$$

Assume the following.

$$\begin{aligned} \forall X0 : \iota \Rightarrow o. ((X0 \text{ k1\_xboole\_0}) \wedge ((\forall X1. (v3\_ordinal1 \\ X1) \Rightarrow ((X0 \text{ X1}) \Rightarrow (X0 (k1\_ordinal1 \text{ X1})))) \wedge (\forall X1. (v3\_ordinal1 \\ X1) \Rightarrow ((v4\_ordinal1 \text{ X1}) \wedge (\forall X2. (v3\_ordinal1 \text{ X2}) \Rightarrow ((X2 \in X1) \Rightarrow \\ (X0 \text{ X2})))) \Rightarrow ((X1 = k1\_xboole\_0) \vee (X0 \text{ X1})))))) \Rightarrow (\forall X1. (v3\_ordinal1 \\ X1) \Rightarrow (X0 \text{ X1})) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. r1\_tarSKI \text{ X0 X0} \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. ((v3\_ordinal1 \text{ X0}) \wedge (v3\_ordinal1 \text{ X1})) \Rightarrow (r1\_ordinal1 \text{ X0 X1}) \Leftrightarrow (r1\_tarSKI \text{ X0 X1}) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0. (v3\_ordinal1 \text{ X0}) \Rightarrow (\forall X1. (v3\_ordinal1 \text{ X1}) \Rightarrow (\neg \\ (X1 \neq k1\_xboole\_0) \wedge ((v4\_ordinal1 \text{ X1}) \wedge (\forall X2. ((v1\_relat\_1 \\ X2) \wedge ((v5\_ordinal1 \text{ X2}) \wedge ((v1\_funct\_1 \text{ X2}) \wedge (v1\_ordinal2 \text{ X2})))) \Rightarrow \\ (\neg (k9\_xtuple\_0 \text{ X2} = X1) \wedge (\forall X3. (v3\_ordinal1 \text{ X3}) \Rightarrow ((X3 \in X1) \Rightarrow \\ (k1\_funct\_1 \text{ X2 X3} = k12\_ordinal2 \text{ X0 X3})))) \wedge (\exists X3. (v3\_ordinal1 \\ X3) \wedge (r1\_ordinal2 \text{ X3 X2})))))))))) \end{aligned} \quad (9)$$

Assume the following.

$$v1\_xboole\_0 \text{ k1\_xboole\_0} \quad (10)$$

Assume the following.

$$\forall X0. \forall X1. ((v3\_ordinal1 \text{ X0}) \wedge (v3\_ordinal1 \text{ X1})) \Rightarrow (v3\_ordinal1 (k12\_ordinal2 \text{ X0 X1})) \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0. (v3\_ordinal1 \text{ X0}) \Rightarrow (\forall X1. ((v5\_ordinal1 \text{ X1}) \wedge ( \\ (v1\_relat\_1 \text{ X1}) \wedge ((v1\_funct\_1 \text{ X1}) \wedge (v1\_ordinal2 \text{ X1})))) \Rightarrow (((X0 = \\ k1\_xboole\_0) \Rightarrow ((r1\_ordinal2 \text{ X0 X1}) \Leftrightarrow (\exists X2. (v3\_ordinal1 \\ X2) \wedge ((X2 \in k9\_xtuple\_0 \text{ X1}) \wedge (\forall X3. (v3\_ordinal1 \text{ X3}) \Rightarrow (((r1\_ordinal1 \\ X2 \text{ X3}) \wedge (X3 \in k9\_xtuple\_0 \text{ X1})) \Rightarrow (k1\_funct\_1 \text{ X1 X3} = k1\_xboole\_0)))))) \wedge \\ ((X0 \neq k1\_xboole\_0) \Rightarrow ((r1\_ordinal2 \text{ X0 X1}) \Leftrightarrow (\forall X2. (v3\_ordinal1 \\ X2) \Rightarrow (\forall X3. (v3\_ordinal1 \text{ X3}) \Rightarrow (\neg (X2 \in X0) \wedge ((X0 \in X3) \wedge (\forall X4. \\ (v3\_ordinal1 \text{ X4}) \Rightarrow (\neg (X4 \in k9\_xtuple\_0 \text{ X1}) \wedge (\forall X5. (v3\_ordinal1 \\ X5) \Rightarrow (((r1\_ordinal1 \text{ X4 X5}) \wedge (X5 \in k9\_xtuple\_0 \text{ X1})) \Rightarrow ((X2 \in k1\_funct\_1 \\ X1 \text{ X5}) \wedge (k1\_funct\_1 \text{ X1 X5} \in X3)))))))))))))) \end{aligned} \quad (12)$$

Assume the following.

$$k1\_xboole\_0 = \text{the } (\lambda X0 : \iota. v1\_xboole\_0 \text{ X0}) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.((v5\_ordinal1\ X0) \wedge ((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1 \\ X0) \wedge (v1\_ordinal2\ X0)))) \Rightarrow ((\exists X1.(v3\_ordinal1\ X1) \wedge (r1\_ordinal2 \\ X1\ X0)) \Rightarrow (\forall X1.(v3\_ordinal1\ X1) \Rightarrow ((X1 = k8\_ordinal2\ X0) \Leftrightarrow ( \\ r1\_ordinal2\ X1\ X0)))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0) \Rightarrow (v3\_ordinal1\ X0) \quad (15)$$

**Theorem 1**

$$\forall X0.(v3\_ordinal1\ X0) \Rightarrow (\forall X1.(v3\_ordinal1\ X1) \Rightarrow (\neg \\ (X0 \neq k1\_xboole\_0) \wedge (k12\_ordinal2\ X0\ X1 = k1\_xboole\_0)))$$