

19\_ordinal4 (TM-  
cuQM82sKb8AQ3v8Jsi4yMkpcqPvkMixYW)

October 27, 2020

Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v5\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_ordinal2 : \iota \Rightarrow o$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $r1\_ordinal2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k1\_ordinal1 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $r1\_ordinal1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(v3\_ordinal1 X0) \Rightarrow ((X0 \neq k1\_xboole\_0) \Rightarrow (k1\_xboole\_0 \in X0)) \quad (1)$$

Assume the following.

$$\forall X0.X0 \in k1\_ordinal1 X0 \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (3)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v5\_ordinal1 X0))) \Rightarrow (v3\_ordinal1 (k9\_xtuple\_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0.(v3\_ordinal1 X0) \Rightarrow ((\neg v1\_xboole\_0 (k1\_ordinal1 X0)) \wedge (v3\_ordinal1 (k1\_ordinal1 X0))) \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v3\_ordinal1\ X0) \Rightarrow (\forall X1.((v5\_ordinal1\ X1) \wedge \\
& (v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_ordinal2\ X1))) \Rightarrow (((X0 = \\
& k1\_xboole\_0) \Rightarrow ((r1\_ordinal2\ X0\ X1) \Leftrightarrow (\exists X2.(v3\_ordinal1 \\
& X2) \wedge ((X2 \in k9\_xtuple\_0\ X1) \wedge (\forall X3.(v3\_ordinal1\ X3) \Rightarrow (((r1\_ordinal1 \\
& X2\ X3) \wedge (X3 \in k9\_xtuple\_0\ X1)) \Rightarrow (k1\_funct\_1\ X1\ X3 = k1\_xboole\_0)))))) \wedge \\
& ((X0 \neq k1\_xboole\_0) \Rightarrow ((r1\_ordinal2\ X0\ X1) \Leftrightarrow (\forall X2.(v3\_ordinal1 \\
& X2) \Rightarrow (\forall X3.(v3\_ordinal1\ X3) \Rightarrow (\neg(X2 \in X0) \wedge ((X0 \in X3) \wedge (\forall X4. \\
& (v3\_ordinal1\ X4) \Rightarrow (\neg(X4 \in k9\_xtuple\_0\ X1) \wedge (\forall X5.(v3\_ordinal1 \\
& X5) \Rightarrow (((r1\_ordinal1\ X4\ X5) \wedge (X5 \in k9\_xtuple\_0\ X1)) \Rightarrow ((X2 \in k1\_funct\_1 \\
& X1\ X5) \wedge (k1\_funct\_1\ X1\ X5 \in X3))))))))))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.(v3\_ordinal1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ X0) \Rightarrow (v3\_ordinal1\ X1)) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (\neg X1 \in X0) \tag{8}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v1\_relat\_1\ X0) \wedge ((v5\_ordinal1\ X0) \wedge ((v1\_funct\_1 \\
& X0) \wedge (v1\_ordinal2\ X0)))) \Rightarrow (\forall X1.(v3\_ordinal1\ X1) \Rightarrow (\neg(r1\_ordinal2 \\
& X1\ X0) \wedge (k9\_xtuple\_0\ X0 = k1\_xboole\_0)))
\end{aligned}$$