

t36_zfrefle1 (TM-
cEsXVLFr21YYz4iwQyP9B1QuwNJKNs1kR)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_classes2 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v2_relat_1 : \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_zf_refle : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_zf_refle : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_ordinal1 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k3_card_3 : \iota \Rightarrow \iota$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_ordinal1 : \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_ordinal2 : \iota \Rightarrow o$ be given. Let $v3_ordinal2 : \iota \Rightarrow o$ be given. Let $k4_ordinal4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_zfrefle1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_zf_refle : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r3_zfrefle1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow ((r3_zfrefle1 X0 X1) \Rightarrow (r2_zfrefle1 X0 X1))) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (v1_classes2 X0)) \Rightarrow (\forall X1. \\ & ((v1_relat_1 X1) \wedge ((v2_relat_1 X1) \wedge ((v5_relat_1 X1 X0) \wedge ((v5_ordinal1 \\ & X1) \wedge ((v1_funct_1 X1) \wedge (v1_zf_refle X1 X0)))))) \Rightarrow (\neg (k4_ordinal1 \in \\ & X0) \wedge ((\forall X2.((v3_ordinal1 X2) \wedge (m1_subset_1 X2 X0)) \Rightarrow (\forall X3. \\ & ((v3_ordinal1 X3) \wedge (m1_subset_1 X3 X0)) \Rightarrow ((X2 \in X3) \Rightarrow (r1_tarski \\ & (k5_zf_refle X0 X1 X2) (k5_zf_refle X0 X1 X3)))))) \wedge ((\forall X2. \\ & ((v3_ordinal1 X2) \wedge (m1_subset_1 X2 X0)) \Rightarrow ((v4_ordinal1 X2) \Rightarrow ((\\ & X2 = k1_xboole_0) \vee (k5_zf_refle X0 X1 X2 = k3_card_3 (k5_relat_1 \\ & X1 X2)))))) \wedge (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_ordinal1 \\ & X0) (k2_ordinal1 X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k2_ordinal1 X0) (k2_ordinal1 X0)))))) \Rightarrow (\neg (v2_ordinal2 X2) \wedge (\\ & (v3_ordinal2 X2) \wedge (\forall X3.((v3_ordinal1 X3) \wedge (m1_subset_1 \\ & X3 X0)) \Rightarrow ((k4_ordinal4 X0 X2 X3 = X3) \Rightarrow ((k1_xboole_0 = X3) \vee (r3_zfrefle1 \\ & (k5_zf_refle X0 X1 X3) (k4_zf_refle X0 X1)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v1_xboole_0 X0) \wedge (v1_classes2 X0)) \wedge \\ & ((v1_relat_1 X1) \wedge ((v2_relat_1 X1) \wedge ((v5_relat_1 X1 X0) \wedge ((v5_ordinal1 \\ & X1) \wedge ((v1_funct_1 X1) \wedge (v1_zf_refle X1 X0)))))) \Rightarrow (k4_zf_refle \\ & X0 X1 = k3_card_3 X1) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v1_xboole_0 X0) \wedge (v1_classes2 \\ & X0)) \wedge ((v1_relat_1 X1) \wedge ((v2_relat_1 X1) \wedge ((v5_relat_1 X1 X0) \wedge \\ & ((v5_ordinal1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_zf_refle X1 X0)))))) \wedge \\ & ((v3_ordinal1 X2) \wedge (m1_subset_1 X2 X0))) \Rightarrow ((\neg v1_xboole_0 (k5_zf_refle \\ & X0 X1 X2)) \wedge (m1_subset_1 (k5_zf_refle X0 X1 X2) X0)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v1_xboole_0 X0) \wedge (v1_classes2 X0)) \wedge \\ & ((v1_relat_1 X1) \wedge ((v2_relat_1 X1) \wedge ((v5_relat_1 X1 X0) \wedge ((v5_ordinal1 \\ & X1) \wedge ((v1_funct_1 X1) \wedge (v1_zf_refle X1 X0)))))) \Rightarrow ((\neg v1_xboole_0 \\ & (k4_zf_refle X0 X1)) \wedge (m1_subset_1 (k4_zf_refle X0 X1) (k1_zfmisc_1 \\ & X0))) \end{aligned} \quad (5)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0 X0) \wedge (v1_classes2 X0)) \Rightarrow (\forall X1. \\ & ((v1_relat_1 X1) \wedge ((v2_relat_1 X1) \wedge ((v5_relat_1 X1 X0) \wedge ((v5_ordinal1 \\ & X1) \wedge ((v1_funct_1 X1) \wedge (v1_zf_refle X1 X0)))))) \Rightarrow (\neg (k4_ordinal1 \in \\ & X0) \wedge ((\forall X2. ((v3_ordinal1 X2) \wedge (m1_subset_1 X2 X0)) \Rightarrow (\forall X3. \\ & ((v3_ordinal1 X3) \wedge (m1_subset_1 X3 X0)) \Rightarrow ((X2 \in X3) \Rightarrow (r1_tarski \\ & (k5_zf_refle X0 X1 X2) (k5_zf_refle X0 X1 X3)))))) \wedge ((\forall X2. \\ & ((v3_ordinal1 X2) \wedge (m1_subset_1 X2 X0)) \Rightarrow ((v4_ordinal1 X2) \Rightarrow ((\\ & X2 = k1_xboole_0) \vee (k5_zf_refle X0 X1 X2 = k3_card_3 (k5_relat_1 \\ & X1 X2)))))) \wedge (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_ordinal1 \\ & X0) (k2_ordinal1 X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k2_ordinal1 X0) (k2_ordinal1 X0)))))) \Rightarrow (\neg (v2_ordinal2 X2) \wedge (\\ & (v3_ordinal2 X2) \wedge (\forall X3. ((v3_ordinal1 X3) \wedge (m1_subset_1 \\ & X3 X0)) \Rightarrow ((k4_ordinal4 X0 X2 X3 = X3) \Rightarrow ((k1_xboole_0 = X3) \vee (r2_zfreple1 \\ & (k5_zf_refle X0 X1 X3) (k4_zf_refle X0 X1)))))))))) \end{aligned}$$