

t35_waybel_1

(TMazw5oKus2TzGvnfRkyvVPT6RWHGTY7svP)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v3_orders_2 : \iota \Rightarrow o$ be given. Let $v4_orders_2 : \iota \Rightarrow o$ be given. Let $v5_orders_2 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_orders_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_struct_0 : \iota \Rightarrow \iota$ be given. Let $v6_waybel_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v11_quantal1 : \iota \Rightarrow o$ be given. Let $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_partfun1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v23_waybel_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(v1_relat_1 X1) \Rightarrow (\forall X2. \\ & (v1_relat_1 X2) \Rightarrow (k3_relat_1 (k3_relat_1 X0 X1) X2 = k3_relat_1 \\ & X0 (k3_relat_1 X1 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l1_orders_2 X1)) \Rightarrow (\forall X2.((v1_funct_1 \\ & X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow \\ & (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 X3 (u1_struct_0 X1) \\ & (u1_struct_0 X0)) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (u1_struct_0 X1) (u1_struct_0 X0)))))) \Rightarrow ((r2_funct_2 (u1_struct_0 \\ & X0) (u1_struct_0 X1) X2 (k1_partfun1 (u1_struct_0 X0) (u1_struct_0 \\ & X1) (u1_struct_0 X1) (u1_struct_0 X1) X2 (k1_partfun1 (u1_struct_0 \\ & X1) (u1_struct_0 X0) (u1_struct_0 X0) (u1_struct_0 X1) X3 X2))) \Rightarrow \\ & (v11_quantal1 (k1_partfun1 (u1_struct_0 X1) (u1_struct_0 X0) \\ & (u1_struct_0 X0) (u1_struct_0 X1) X3 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))\Rightarrow((r2_relset_1 X0 X1 (k4_relset_1 X0 X0 X0 \\ & X1 (k6_partfun1 X0) X2) X2)\wedge(r2_relset_1 X0 X1 (k4_relset_1 X0 X1 \\ & X1 X1 X2 (k6_partfun1 X1)) X2)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge(l1_orders_2 X0))\Rightarrow(\forall X1. \\ & ((\neg v2_struct_0 X1)\wedge(l1_orders_2 X1))\Rightarrow(\forall X2.((\neg v2_struct_0 \\ & X2)\wedge(l1_orders_2 X2))\Rightarrow(\forall X3.((v1_funct_1 X3)\wedge((v1_funct_2 \\ & X3 (u1_struct_0 X0) (u1_struct_0 X1))\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1))))))\Rightarrow(\forall X4. \\ & ((v1_funct_1 X4)\wedge((v1_funct_2 X4 (u1_struct_0 X1) (u1_struct_0 \\ & X2))\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\ & X1) (u1_struct_0 X2))))))\Rightarrow(((v5_orders_3 X3 X0 X1)\wedge(v5_orders_3 \\ & X4 X1 X2))\Rightarrow(v5_orders_3 (k1_partfun1 (u1_struct_0 X0) (u1_struct_0 \\ & X1) (u1_struct_0 X1) (u1_struct_0 X2) X3 X4) X0 X2)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((m1_subset_1 X2 \\ & (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\wedge(m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))\Rightarrow((r2_relset_1 X0 X1 X2 X3)\Leftrightarrow(X2 = X3)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1_funct_1 X2)\wedge \\ & ((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))))\wedge((v1_funct_1 X3)\wedge((v1_funct_2 X3 X0 X1)\wedge(m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\Rightarrow((r2_funct_2 X0 X1 X2 \\ & X3)\Leftrightarrow(X2 = X3)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\wedge(m1_subset_1 \\ & X5 (k1_zfmisc_1 (k2_zfmisc_1 X2 X3))))\Rightarrow(k4_relset_1 X0 X1 X2 X3 \\ & X4 X5 = k3_relat_1 X4 X5) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & (((v1_funct_1 X4)\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1))))\wedge((v1_funct_1 X5)\wedge(m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X2 X3))))\Rightarrow(k1_partfun1 X0 X1 X2 X3 X4 X5 = k3_relat_1 X4 X5) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\exists X1. \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\ & X0)))) \wedge ((\neg v1_xboole_0 X1) \wedge ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 \\ & (u1_struct_0 X0)) \wedge ((v5_relat_1 X1 (u1_struct_0 X0)) \wedge ((v1_funct_1 \\ & X1) \wedge ((v1_partfun1 X1 (u1_struct_0 X0)) \wedge ((v1_funct_2 X1 (u1_struct_0 \\ & X0) (u1_struct_0 X0)) \wedge (v6_waybel_1 X1 X0)))))))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. ((\neg v1_xboole_0 \\ & X1) \wedge (((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 X3 \\ & (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \wedge ((v1_funct_1 X4) \wedge ((v1_funct_2 \\ & X4 X1 X2) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X1 X2)))))) \Rightarrow \\ & ((v1_funct_1 (k3_relat_1 X3 X4)) \wedge (v1_funct_2 (k3_relat_1 X3 X4) \\ & X0 X2)) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1_orders_2 X0) \Rightarrow ((v1_funct_1 (k3_struct_0 X0)) \wedge \\ & ((v1_funct_2 (k3_struct_0 X0) (u1_struct_0 X0) (u1_struct_0 X0)) \wedge \\ & (v23_waybel_0 (k3_struct_0 X0) X0 X0))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0. (l1_orders_2 X0) \Rightarrow (l1_struct_0 X0) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & (((m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \wedge (m1_subset_1 \\ & X5 (k1_zfmisc_1 (k2_zfmisc_1 X2 X3)))) \Rightarrow (m1_subset_1 (k4_relset_1 \\ & X0 X1 X2 X3 X4 X5) (k1_zfmisc_1 (k2_zfmisc_1 X0 X3)))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1_struct_0 X0) \Rightarrow ((v1_funct_1 (k3_struct_0 X0)) \wedge \\ & ((v1_funct_2 (k3_struct_0 X0) (u1_struct_0 X0) (u1_struct_0 X0)) \wedge \\ & (m1_subset_1 (k3_struct_0 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\ & X0) (u1_struct_0 X0)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0. (l1_struct_0 X0) \Rightarrow (k3_struct_0 X0 = k6_partfun1 (u1_struct_0 X0)) \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\ & ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (u1_struct_0 X0) (u1_struct_0 \\ & X0)) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\ & X0) (u1_struct_0 X0)))))) \Rightarrow ((v6_waybel_1 X1 X0) \Leftrightarrow ((v11_quantal1 \\ & X1) \wedge (v5_orders_3 X1 X0 X0)))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge (v4_relat_1 \\ & X1 X0)) \Rightarrow ((v1_xboole_0 X1) \wedge ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \end{aligned} \quad (18)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 \\ & X0) \wedge ((v5_orders_2 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow (\forall X1.((v1_funct_1 \\ & X1) \wedge ((v1_funct_2 X1 (u1_struct_0 X0) (u1_struct_0 X0)) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))))) \Rightarrow \\ & ((\exists X2.((\neg v2_struct_0 X2) \wedge ((v3_orders_2 X2) \wedge ((v4_orders_2 \\ & X2) \wedge ((v5_orders_2 X2) \wedge (l1_orders_2 X2)))))) \wedge (\exists X3.((v1_funct_1 \\ & X3) \wedge ((v1_funct_2 X3 (u1_struct_0 X0) (u1_struct_0 X2)) \wedge (m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X2)))))) \wedge \\ & (\exists X4.((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (u1_struct_0 X2) \\ & (u1_struct_0 X0)) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (u1_struct_0 X2) (u1_struct_0 X0)))))) \wedge ((v5_orders_3 X3 X0 X2) \wedge \\ & ((v5_orders_3 X4 X2 X0) \wedge ((r2_funct_2 (u1_struct_0 X0) (u1_struct_0 \\ & X0) X1 (k1_partfun1 (u1_struct_0 X0) (u1_struct_0 X2) (u1_struct_0 \\ & X2) (u1_struct_0 X0) X3 X4)) \wedge (r2_funct_2 (u1_struct_0 X2) (u1_struct_0 \\ & X2) (k3_struct_0 X2) (k1_partfun1 (u1_struct_0 X2) (u1_struct_0 \\ & X0) (u1_struct_0 X0) (u1_struct_0 X2) X4 X3)))))) \Rightarrow (v6_waybel_1 \\ & X1 X0)) \end{aligned}$$