

l23_waybel_5

(TMQL9Ttsas7rN9xQt8AeLRaBVJkS4rqxZuh)

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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 $v1_lattice3 : \iota \Rightarrow o$ be given. Let $v2_lattice3 : \iota \Rightarrow o$ be given. Let $v3_lattice3 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v2_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_card_3 : \iota \Rightarrow \iota$ be given. Let $k2_funct_6 : \iota \Rightarrow \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_waybel_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v1_waybel_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_waybel_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. k7_funcop_1 X0 X1 = k2_funcop_1 X0 X1 \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge (l1_orders_2 X0))) \Rightarrow (\exists X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \wedge ((\neg v1_xboole_0 X1) \wedge ((v1_finset_1 X1) \wedge ((v1_waybel_0 X1 X0) \wedge (v2_waybel_0 X1 X0)))))) \quad (4)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v2_relat_1 X0) \wedge (v1_funct_1 X0))) \Rightarrow (\neg v1_xboole_0 (k4_card_3 X0)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v2_relat_1 X0) \wedge (v1_funct_1 X0))) \Rightarrow \\ ((v1_relat_1 (k2_funct_6 X0)) \wedge ((v2_relat_1 (k2_funct_6 X0)) \wedge \\ (v1_funct_1 (k2_funct_6 X0)))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (v1_relat_1 (k2_funcop_1 X0 X1)) \wedge ((v4_relat_1 \\ (k2_funcop_1 X0 X1) X0) \wedge ((v1_funct_1 (k2_funcop_1 X0 X1)) \wedge (v1_partfun1 \\ (k2_funcop_1 X0 X1) X0))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. (v1_relat_1 (k2_funcop_1 X0 X1)) \wedge (v1_funct_1 \\ (k2_funcop_1 X0 X1)) \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. v4_relat_1 (k2_funcop_1 X0 X1) X0 \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (((v1_relat_1 X1) \wedge ((v4_relat_1 \\ X1 X0) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \wedge ((v1_relat_1 \\ X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))) \Rightarrow \\ (\forall X3. (m2_pboole X3 X0 X1 X2) \Rightarrow ((v1_relat_1 X3) \wedge ((v4_relat_1 \\ X3 X0) \wedge ((v1_funct_1 X3) \wedge (v1_partfun1 X3 X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. \forall X3. (((v1_relat_1 X2) \wedge \\ ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))) \wedge \\ (m2_pboole X3 X0 X2 (k7_funcop_1 X0 X1))) \Rightarrow (m2_pboole (k2_waybel_5 \\ X0 X1 X2 X3) (k4_card_3 (k2_funct_6 X3)) (k7_funcop_1 (k4_card_3 \\ (k2_funct_6 X3)) X0) (k7_funcop_1 (k4_card_3 (k2_funct_6 X3)) \\ X1)) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow ((v1_relat_1 (\\ k2_funct_6 X0)) \wedge (v1_funct_1 (k2_funct_6 X0))) \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (\\ (v1_partfun1 X1 X0) \Leftrightarrow (k1_relset_1 X0 X1 = X0)) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X1) \wedge ((v1_relat_1 \\ & X2) \wedge ((v2_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (\\ & v1_partfun1 X2 X0)))))) \Rightarrow (\forall X3. (m2_pboole X3 X0 X2 (k7_funcop_1 \\ & X0 X1)) \Rightarrow (v2_relat_1 X3)) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_xboole_0 X1)) \quad (15)$$

Assume the following.

$$\forall X0. (l1_orders_2 X0) \Rightarrow ((v1_lattice3 X0) \Rightarrow (\neg v2_struct_0 X0)) \quad (16)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\ & X0) \wedge ((v1_lattice3 X0) \wedge ((v2_lattice3 X0) \wedge ((v3_lattice3 X0) \wedge \\ & (l1_orders_2 X0))))))) \Rightarrow (\forall X1. (\neg v1_xboole_0 X1) \Rightarrow (\forall X2. \\ & ((v1_relat_1 X2) \wedge ((v2_relat_1 X2) \wedge ((v4_relat_1 X2 X1) \wedge ((v1_funct_1 \\ & X2) \wedge (v1_partfun1 X2 X1)))))) \Rightarrow (\forall X3. (m2_pboole X3 X1 X2 (k7_funcop_1 \\ & X1 (u1_struct_0 X0)) \Rightarrow (\forall X4. (m1_subset_1 X4 (k4_card_3 \\ & (k2_funct_6 X3))) \Leftrightarrow (X4 \in k1_relset_1 (k4_card_3 (k2_funct_6 X3)) \\ & (k2_waybel_5 X1 (u1_struct_0 X0) X2 X3)))))) \end{aligned}$$