

t18_waybel22 (TM-
NMg8KG5FqFQQ1UHzubqiaYT_{xw}HqruLVGE)

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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 $v3_waybel_3 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $r1_waybel22 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $r5_waybel_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_yellow_1 : \iota \Rightarrow \iota$ be given. Let $k8_waybel_0 : \iota \Rightarrow \iota$ be given. Let $k3_yellow_1 : \iota \Rightarrow \iota$ be given. Let $k1_waybel22 : \iota \Rightarrow \iota$ be given. Let $v1_orders_2 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v2_yellow_0 : \iota \Rightarrow o$ be given. Let $v3_yellow_0 : \iota \Rightarrow o$ be given. Let $v1_yellow_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\ & X0) \wedge ((v1_lattice3 X0) \wedge ((v2_lattice3 X0) \wedge ((v3_lattice3 X0) \wedge \\ & ((v3_waybel_3 X0) \wedge (l1_orders_2 X0))))))) \Rightarrow (\forall X1.((v3_orders_2 \\ & X1) \wedge ((v4_orders_2 X1) \wedge ((v5_orders_2 X1) \wedge ((v1_lattice3 X1) \wedge \\ & ((v2_lattice3 X1) \wedge ((v3_lattice3 X1) \wedge ((v3_waybel_3 X1) \wedge (l1_orders_2 \\ & X1))))))) \Rightarrow (\forall X2. \forall X3. ((r1_waybel22 X0 X2) \wedge ((r1_waybel22 \\ & X1 X3) \wedge (k1_card_1 X2 = k1_card_1 X3))) \Rightarrow (r5_waybel_1 X0 X1)) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. r1_waybel22 (k2_yellow_1 (k8_waybel_0 (k3_yellow_1 X0))) (k1_waybel22 X0) \quad (2)$$

Assume the following.

$$\forall X0. k1_card_1 (k1_waybel22 X0) = k1_card_1 X0 \quad (3)$$

Assume the following.

$$\forall X0. (v1_orders_2 (k3_yellow_1 X0)) \wedge (v3_lattice3 (k3_yellow_1 X0)) \quad (4)$$

Assume the following.

$$\forall X0. (\neg v2_struct_0 (k3_yellow_1 X0)) \wedge ((v1_orders_2 (k3_yellow_1 X0)) \wedge ((v3_orders_2 (k3_yellow_1 X0)) \wedge ((v4_orders_2 (k3_yellow_1 X0)) \wedge (v5_orders_2 (k3_yellow_1 X0)))))) \quad (5)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0) \Rightarrow ((\neg v2_struct_0 (k2_yellow_1 X0)) \wedge (v1_orders_2 (k2_yellow_1 X0))) \quad (6)$$

Assume the following.

$$\forall X0.(v1_orders_2 (k2_yellow_1 X0)) \wedge ((v3_orders_2 (k2_yellow_1 X0)) \wedge ((v4_orders_2 (k2_yellow_1 X0)) \wedge (v5_orders_2 (k2_yellow_1 X0)))) \quad (7)$$

Assume the following.

$$\forall X0.((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge ((v2_yellow_0 X0) \wedge ((v2_lattice3 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow ((v1_orders_2 (k2_yellow_1 (k8_waybel_0 X0))) \wedge (v3_lattice3 (k2_yellow_1 (k8_waybel_0 X0)))) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge ((v2_yellow_0 X0) \wedge ((v2_lattice3 X0) \wedge (l1_orders_2 X0))))))) \Rightarrow ((v1_orders_2 (k2_yellow_1 (k8_waybel_0 X0))) \wedge (v3_waybel_3 (k2_yellow_1 (k8_waybel_0 X0)))) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge ((v2_yellow_0 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow (\neg v1_xboole_0 (k8_waybel_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.(v1_orders_2 (k3_yellow_1 X0)) \wedge (l1_orders_2 (k3_yellow_1 X0)) \quad (11)$$

Assume the following.

$$\forall X0.(v1_orders_2 (k2_yellow_1 X0)) \wedge (l1_orders_2 (k2_yellow_1 X0)) \quad (12)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow ((v3_yellow_0 X0) \Rightarrow ((v1_yellow_0 X0) \wedge (v2_yellow_0 X0))) \quad (13)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge (v3_lattice3 X0)) \Rightarrow ((\neg v2_struct_0 X0) \wedge (v3_yellow_0 X0))) \quad (14)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge (v3_lattice3 X0)) \Rightarrow ((\neg v2_struct_0 X0) \wedge ((v1_lattice3 X0) \wedge (v2_lattice3 X0)))) \quad (15)$$

Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. ((v3_orders_2 X1) \wedge ((v4_orders_2 X1) \wedge \\ & (v5_orders_2 X1) \wedge ((v1_lattice3 X1) \wedge ((v2_lattice3 X1) \wedge ((v3_lattice3 \\ & X1) \wedge ((v3_waybel_3 X1) \wedge (l1_orders_2 X1))))))) \Rightarrow (\forall X2. \\ & ((r1_waybel22 X1 X2) \wedge (k1_card_1 X2 = k1_card_1 X0)) \Rightarrow (r5_waybel_1 \\ & X1 (k2_yellow_1 (k8_waybel_0 (k3_yellow_1 X0)))))) \end{aligned}$$