

t24_dickson (TMR-
bCg2nV5wMFNb6eZPt45iHC1xRxiaZmnz)

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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 $r2_wellord1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_orders_2 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $k6_dickson : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $r7_relat_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_relat_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r6_relat_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v16_waybel_0 : \iota \Rightarrow o$ be given. Let $v3_dickson : \iota \Rightarrow o$ be given. Let $v1_wellfnd1 : \iota \Rightarrow o$ be given. Let $k5_dickson : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r8_relat_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r4_relat_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_wellord1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. (v1_relat_1 X1) \Rightarrow ((r7_relat_2 X1 X0) \Leftrightarrow ((r1_relat_2 X1 X0) \wedge (r6_relat_2 X1 X0))) \quad (1)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow ((v16_waybel_0 X0) \Leftrightarrow (r7_relat_2 (u1_orders_2 X0) (u1_struct_0 X0))) \quad (2)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow ((v3_dickson X0) \Rightarrow (((v16_waybel_0 X0) \wedge (v1_wellfnd1 (k5_dickson X0))) \Leftrightarrow (\forall X1. ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (k1_card_1 (k6_dickson X0 X1) = np_1)))) \quad (3)$$

Assume the following.

$$\forall X0. (l1_orders_2 X0) \Rightarrow (((v1_wellfnd1 (k5_dickson X0)) \wedge (v5_orders_2 X0)) \Rightarrow (v1_wellfnd1 X0)) \quad (4)$$

Assume the following.

$$\forall X0. (l1_orders_2 X0) \Rightarrow ((v1_wellfnd1 X0) \Rightarrow (v1_wellfnd1 (k5_dickson X0))) \quad (5)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow (m1_subset_1 (u1_orders_2 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))) \quad (6)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(r2_wellord1 X0 X1) \Leftrightarrow (r1_relat_2 X0 X1) \wedge ((r8_relat_2 X0 X1) \wedge ((r4_relat_2 X0 X1) \wedge ((r6_relat_2 X0 X1) \wedge (r1_wellord1 X0 X1)))))) \quad (7)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow ((v5_orders_2 X0) \Leftrightarrow (r4_relat_2 (u1_orders_2 X0) (u1_struct_0 X0))) \quad (8)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow ((v4_orders_2 X0) \Leftrightarrow (r8_relat_2 (u1_orders_2 X0) (u1_struct_0 X0))) \quad (9)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow ((v3_dickson X0) \Leftrightarrow ((v3_orders_2 X0) \wedge (v4_orders_2 X0))) \quad (10)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow ((v1_wellfnd1 X0) \Leftrightarrow (r1_wellord1 (u1_orders_2 X0) (u1_struct_0 X0))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \quad (12)$$

Theorem 1

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow ((r2_wellord1 (u1_orders_2 X0) (u1_struct_0 X0)) \Leftrightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (k1_card_1 (k6_dickson X0 X1) = np_1))$$