

t38\_card\_2 (TMd-  
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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k5\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_card\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_ordinal3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $k10\_ordinal2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 X1 k5\_numbers) \Rightarrow (k2\_nat\_1 X0 X1 = k8\_ordinal3 X0 X1)) \quad (1)$$

Assume the following.

$$\forall X0.(v3\_ordinal1 X0) \Rightarrow (\forall X1.(v3\_ordinal1 X1) \Rightarrow (k1\_card\_1 (k10\_ordinal2 X0 X1) = k1\_card\_2 (k1\_card\_1 X0) (k1\_card\_1 X1))) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(((v3\_ordinal1 X0) \wedge (v7\_ordinal1 X0)) \wedge ((v3\_ordinal1 X1) \wedge (v7\_ordinal1 X1))) \Rightarrow (k8\_ordinal3 X0 X1 = k10\_ordinal2 X0 X1) \quad (3)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (4)$$

Assume the following.

$$\forall X0.(v1\_finset\_1 X0) \Rightarrow (k5\_card\_1 X0 = k1\_card\_1 X0) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k5\_numbers) \wedge (v7\_ordinal1 X1)) \Rightarrow (k2\_nat\_1 X0 X1 = k2\_xcmplx\_0 X0 X1) \quad (6)$$

Assume the following.

$$(\neg v1\_xboole\_0 \ k4\_ordinal1) \wedge (v3\_ordinal1 \ k4\_ordinal1) \quad (7)$$

Assume the following.

$$v6\_membered \ k4\_ordinal1 \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. ((v7\_ordinal1 \ X0) \wedge (v7\_ordinal1 \ X1)) \Rightarrow (v7\_ordinal1 \ (k2\_xcmplx\_0 \ X0 \ X1)) \quad (9)$$

Assume the following.

$$\forall X0. (v3\_ordinal1 \ X0) \Rightarrow (\forall X1. (m1\_subset\_1 \ X1 \ X0) \Rightarrow (v3\_ordinal1 \ X1)) \quad (10)$$

Assume the following.

$$\forall X0. (v7\_ordinal1 \ X0) \Rightarrow (v1\_finset\_1 \ X0) \quad (11)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 \ X0 \ k4\_ordinal1) \Rightarrow (v1\_finset\_1 \ X0) \quad (12)$$

Assume the following.

$$\forall X0. (v6\_membered \ X0) \Rightarrow (\forall X1. (m1\_subset\_1 \ X1 \ X0) \Rightarrow (v7\_ordinal1 \ X1)) \quad (13)$$

**Theorem 1**

$$\forall X0. (m1\_subset\_1 \ X0 \ k5\_numbers) \Rightarrow (\forall X1. (m1\_subset\_1 \ X1 \ k5\_numbers) \Rightarrow (k5\_card\_1 \ (k2\_nat\_1 \ X0 \ X1) = k1\_card\_2 \ (k5\_card\_1 \ X0) \ (k5\_card\_1 \ X1)))$$