

## t50\_orders\_2

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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  $v6\_orders.2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc.1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct.0 : \iota \Rightarrow \iota$  be given. Let  $r3\_orders.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_orders.2 : \iota \Rightarrow \iota$  be given. Let  $v1\_relat.1 : \iota \Rightarrow o$  be given. Let  $r4\_relat.2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  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  $r8\_relat.2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. (v1\_relat.1 X2) \Rightarrow (((r4\_relat.2 X2 X0) \wedge (r1\_tarski X1 X0)) \Rightarrow (r4\_relat.2 X2 X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (v1\_relat.1 X1) \Rightarrow ((r7\_relat.2 X1 X0) \Leftrightarrow ((r1\_relat.2 X1 X0) \wedge (r6\_relat.2 X1 X0))) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset.1 X0 (k1\_zfmisc.1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (v1\_relat.1 X2) \Rightarrow (((r8\_relat.2 X2 X0) \wedge (r1\_tarski X1 X0)) \Rightarrow (r8\_relat.2 X2 X1)) \quad (4)$$

Assume the following.

$$\forall X0. (l1\_orders.2 X0) \Rightarrow (m1\_subset.1 (u1\_orders.2 X0) (k1\_zfmisc.1 (k2\_zfmisc.1 (u1\_struct.0 X0) (u1\_struct.0 X0)))) \quad (5)$$

Assume the following.

$$\forall X0. (v1\_relat.1 X0) \Rightarrow (\forall X1. (r3\_orders.1 X0 X1) \Leftrightarrow ((r1\_relat.2 X0 X1) \wedge ((r8\_relat.2 X0 X1) \wedge ((r4\_relat.2 X0 X1) \wedge (r6\_relat.2 X0 X1))))) \quad (6)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow ((v6\_orders\_2 X1 X0) \Leftrightarrow (r7\_relat\_2 (u1\_orders\_2 X0) X1))) \quad (7)$$

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.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \quad (10)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1.((v6\_orders\_2 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow (r3\_orders\_1 (u1\_orders\_2 X0) X1))$$