

# t31\_orders\_1 (TMPXr- bUFTX6UsnTtN5MBa8qfuNn3wUGmgv3)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_orders\_1 : \iota \Rightarrow o$  be given. Let  $r1\_orders\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_2 : \iota \Rightarrow o$  be given. Let  $r1\_relat\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r8\_relat\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v8\_relat\_2 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow ((v1\_relat\_2 X0) \Leftrightarrow (r1\_relat\_2 X0 (k1\_relat\_1 X0))) \quad (1)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(r1\_orders\_1 X0 X1) \Leftrightarrow (r1\_relat\_2 X0 X1) \wedge (r8\_relat\_2 X0 X1)) \quad (2)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow ((v1\_orders\_1 X0) \Leftrightarrow ((v1\_relat\_2 X0) \wedge (v8\_relat\_2 X0))) \quad (3)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow ((v8\_relat\_2 X0) \Leftrightarrow (r8\_relat\_2 X0 (k1\_relat\_1 X0))) \quad (4)$$

## Theorem 1

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow ((v1\_orders\_1 X0) \Rightarrow (r1\_orders\_1 X0 (k1\_relat\_1 X0)))$$