

## t29\_orders\_1

(TMYvG3rNGV5bHjN6Pvu5Mv9tcpikxJiY1oV)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $r3\_orders\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_orders\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_orders\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $r4\_relat\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r6\_relat\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(r3\_orders\_1 X0 X1) \Leftrightarrow ( \\ (r1\_relat\_2 X0 X1) \wedge ((r8\_relat\_2 X0 X1) \wedge ((r4\_relat\_2 X0 X1) \wedge (r6\_relat\_2 \\ X0 X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(r2\_orders\_1 X0 X1) \Leftrightarrow ( \\ (r1\_relat\_2 X0 X1) \wedge ((r8\_relat\_2 X0 X1) \wedge (r4\_relat\_2 X0 X1)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(r1\_orders\_1 X0 X1) \Leftrightarrow ( \\ (r1\_relat\_2 X0 X1) \wedge (r8\_relat\_2 X0 X1))) \end{aligned} \tag{3}$$

### Theorem 1

$$\begin{aligned} \forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(r3\_orders\_1 X0 X1) \Rightarrow ( \\ (r1\_orders\_1 X0 X1) \wedge (r2\_orders\_1 X0 X1))) \end{aligned}$$