

## t45\_ordinal6

(TMQYHU5rNxn1UrD64rEMCrZ4xsmmM7XmkkW)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v5\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_ordinal2 : \iota \Rightarrow o$  be given. Let  $v2\_ordinal6 : \iota \Rightarrow o$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_ordinal6 : \iota \Rightarrow \iota$  be given. Let  $r1\_ordinal1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_ordinal2 : \iota \Rightarrow o$  be given. Let  $r1\_abian : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_ordinal2 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v5\_ordinal1 X0) \wedge ((v1\_funct\_1 \\ & X0) \wedge (v1\_ordinal2 X0)))) \Rightarrow (\forall X1.(v3\_ordinal1 X1) \Rightarrow (\forall X2. \\ & (v3\_ordinal1 X2) \Rightarrow (((v2\_ordinal2 X0) \wedge ((r1\_ordinal1 X1 X2) \wedge (X2 \in \\ & k9\_xtuple\_0 X0)))) \Rightarrow (r1\_ordinal1 (k1\_funct\_1 X0 X1) (k1\_funct\_1 \\ & X0 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge ((v5\_ordinal1 \\ & X1) \wedge (v1\_ordinal2 X1)))) \Rightarrow ((X0 \in k9\_xtuple\_0 (k3\_ordinal6 X1)) \Rightarrow \\ & (r1\_abian (k1\_funct\_1 (k3\_ordinal6 X1) X0) X1)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_relat\_1 X0) \wedge ((v5\_ordinal1 X0) \wedge ((v1\_funct\_1 \\ & X0) \wedge (v1\_ordinal2 X0)))) \Rightarrow (\forall X1.(v3\_ordinal1 X1) \Rightarrow (((v2\_ordinal2 \\ & X0) \wedge (X1 \in k9\_xtuple\_0 X0)) \Rightarrow (r1\_ordinal1 X1 (k1\_funct\_1 X0 X1)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v5\_ordinal1 X0) \wedge ((v1\_relat\_1 X0) \wedge \\ & (v1\_funct\_1 X0) \wedge (v1\_ordinal2 X0)))) \wedge (v3\_ordinal1 X1) \Rightarrow (v3\_ordinal1 \\ & (k1\_funct\_1 X0 X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((v5\_ordinal1 X0)\wedge(v1\_ordinal2 X0))))\Rightarrow((v1\_relat\_1 (k3\_ordinal6 X0))\wedge((v1\_funct\_1 (k3\_ordinal6 X0))\wedge((v5\_ordinal1 (k3\_ordinal6 X0))\wedge((v1\_ordinal2 (k3\_ordinal6 X0))\wedge(v2\_ordinal2 (k3\_ordinal6 X0))))))) \quad (5)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((v5\_ordinal1 X0)\wedge(v1\_ordinal2 X0))))\Rightarrow((v1\_relat\_1 (k3\_ordinal6 X0))\wedge((v1\_funct\_1 (k3\_ordinal6 X0))\wedge((v5\_ordinal1 (k3\_ordinal6 X0))\wedge(v1\_ordinal2 (k3\_ordinal6 X0)))))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge(v1\_funct\_1 X1))\Rightarrow((r1\_abian X0 X1)\Leftrightarrow((X0 \in k9\_xtuple\_0 X1)\wedge(X0 = k1\_funct\_1 X1 X0))) \quad (7)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((v5\_ordinal1 X0)\wedge(v1\_ordinal2 X0)\wedge(v2\_ordinal6 X0))))\Rightarrow((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((v5\_ordinal1 X0)\wedge((v1\_ordinal2 X0)\wedge((v2\_ordinal2 X0)\wedge(v3\_ordinal2 X0)))))) \quad (8)$$

**Theorem 1**

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((v5\_ordinal1 X0)\wedge(v1\_ordinal2 X0))))\Rightarrow((v2\_ordinal6 X0)\Rightarrow(\forall X1.(v3\_ordinal1 X1)\Rightarrow((X1 \in k9\_xtuple\_0 (k3\_ordinal6 X0))\Rightarrow(r1\_ordinal1 (k1\_funct\_1 X0 X1) (k1\_funct\_1 (k3\_ordinal6 X0) X1))))))$$