

t42_wellord1 (TMMVYJGPss- LLeeFZ9V7ZURmDPQxKeMxMjM5)

October 27, 2020

Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $r4_wellord1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $r3_wellord1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(v1_relat_1 X1) \Rightarrow (\forall X2. \\ & (v1_relat_1 X2) \Rightarrow (\forall X3.((v1_relat_1 X3) \wedge (v1_funct_1 X3)) \Rightarrow \\ & (\forall X4.((v1_relat_1 X4) \wedge (v1_funct_1 X4)) \Rightarrow (((r3_wellord1 \\ & X0 X1 X3) \wedge (r3_wellord1 X1 X2 X4)) \Rightarrow (r3_wellord1 X0 X2 (k3_relat_1 \\ & X3 X4))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \wedge ((\\ & v1_relat_1 X1) \wedge (v1_funct_1 X1))) \Rightarrow ((v1_relat_1 (k3_relat_1 X0 \\ & X1)) \wedge (v1_funct_1 (k3_relat_1 X0 X1))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(v1_relat_1 X1) \Rightarrow ((r4_wellord1 \\ & X0 X1) \Leftrightarrow (\exists X2.((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \wedge (r3_wellord1 \\ & X0 X1 X2)))) \end{aligned} \tag{3}$$

Theorem 1

$$\begin{aligned} & \forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(v1_relat_1 X1) \Rightarrow (\forall X2. \\ & (v1_relat_1 X2) \Rightarrow (((r4_wellord1 X0 X1) \wedge (r4_wellord1 X1 X2)) \Rightarrow (\\ & r4_wellord1 X0 X2)))) \end{aligned}$$