

t15_wellord2 (TMHqXDYB- WhZ6WbcaDCq8TD1hDcisH7iiuiz)

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Let $r2_wellord2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v2_funct_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(v1_relat_1 X1) \Rightarrow ((r1_tarski (k9_xtuple_0 X0) (k10_xtuple_0 X1)) \Rightarrow (k10_xtuple_0 (k3_relat_1 X1 X0) = k10_xtuple_0 X0))) \quad (1)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(v1_relat_1 X1) \Rightarrow ((r1_tarski (k10_xtuple_0 X0) (k9_xtuple_0 X1)) \Rightarrow (k9_xtuple_0 (k3_relat_1 X0 X1) = k9_xtuple_0 X0))) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.r1_tarski X0 X0 \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v2_funct_1 X0))) \wedge ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v2_funct_1 X1)))) \Rightarrow ((v1_relat_1 (k3_relat_1 X0 X1)) \wedge (v2_funct_1 (k3_relat_1 X0 X1))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \wedge ((v1_relat_1 X1) \wedge (v1_funct_1 X1))) \Rightarrow ((v1_relat_1 (k3_relat_1 X0 X1)) \wedge (v1_funct_1 (k3_relat_1 X0 X1))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.v1_relat_1 (k3_relat_1 X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(r2_wellord2 X0 X1) \Leftrightarrow (\exists X2.((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \wedge ((v2_funct_1 X2) \wedge ((k9_xtuple_0 X2 = X0) \wedge (k10_xtuple_0 X2 = X1)))) \quad (7)$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.((r2_wellord2\ X0\ X1)\wedge(r2_wellord2\ X1\ X2))\Rightarrow(r2_wellord2\ X0\ X2)$$