

# t36\_wellord1 (TM- bqYq7stuiYVgPHKJ1APWFFjeeDAZaNDUW)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $r3\_wellord1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v2\_funct\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(v1\_relat\_1 X1) \Rightarrow (\forall X2. \\ & ((v1\_relat\_1 X2) \wedge (v1\_funct\_1 X2)) \Rightarrow ((r3\_wellord1 X0 X1 X2) \Leftrightarrow (( \\ & k9\_xtuple\_0 X2 = k1\_relat\_1 X0) \wedge ((k10\_xtuple\_0 X2 = k1\_relat\_1 \\ & X1) \wedge ((v2\_funct\_1 X2) \wedge (\forall X3.\forall X4.(k4\_tarski X3 X4 \in \\ & X0) \Leftrightarrow ((X3 \in k1\_relat\_1 X0) \wedge ((X4 \in k1\_relat\_1 X0) \wedge (k4\_tarski (k1\_funct\_1 \\ & X2 X3) (k1\_funct\_1 X2 X4) \in X1)))))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow ((v2\_funct\_1 X0) \Leftrightarrow \\ & (\forall X1.\forall X2.((X1 \in k9\_xtuple\_0 X0) \wedge ((X2 \in k9\_xtuple\_0 \\ & X0) \wedge (k1\_funct\_1 X0 X1 = k1\_funct\_1 X0 X2))) \Rightarrow (X1 = X2))) \end{aligned} \quad (2)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(v1\_relat\_1 X1) \Rightarrow (\forall X2. \\ & ((v1\_relat\_1 X2) \wedge (v1\_funct\_1 X2)) \Rightarrow ((r3\_wellord1 X0 X1 X2) \Rightarrow (\forall X3. \\ & \forall X4.(k4\_tarski X3 X4 \in X0) \Rightarrow ((X3 = X4) \vee ((k4\_tarski (k1\_funct\_1 \\ & X2 X3) (k1\_funct\_1 X2 X4) \in X1) \wedge (k1\_funct\_1 X2 X3 \neq k1\_funct\_1 X2 X4)))))) \end{aligned}$$