

t5_termord (TMT-
coB6Z3Ma7LGPrhBM6T3BYrWtvKKssmzW)

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Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k15_pre_poly : \iota \Rightarrow \iota$ be given. Let $v1_relat.2 : \iota \Rightarrow o$ be given. Let $v4_relat.2 : \iota \Rightarrow o$ be given. Let $v6_relat.2 : \iota \Rightarrow o$ be given. Let $v8_relat.2 : \iota \Rightarrow o$ be given. Let $m1_subset.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc.1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat.1 : \iota \Rightarrow o$ be given. Let $v4_relat.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct.1 : \iota \Rightarrow o$ be given. Let $v4_valued.0 : \iota \Rightarrow o$ be given. Let $v2_pre_poly : \iota \Rightarrow o$ be given. Let $r1_termord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_termord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r6_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relat.1 : \iota \Rightarrow \iota$ be given. Let $r6_relat.2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1_relat.1 X1) \wedge (v4_relat.1 \\ & X1 X0) \wedge ((v1_funct.1 X1) \wedge (v1_partfun1 X1 X0))) \wedge ((v1_relat.1 \\ & X2) \wedge ((v4_relat.1 X2 X0) \wedge (v1_funct.1 X2) \wedge (v1_partfun1 X2 X0)))) \Rightarrow \\ & (r6_pboole X0 X1 X2) \Leftrightarrow (X1 = X2) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. (v3_ordinal1 X0) \Rightarrow (\forall X1. ((v1_partfun1 X1 (k15_pre_poly \\ & X0)) \wedge ((v1_relat.2 X1) \wedge (v4_relat.2 X1) \wedge (v8_relat.2 X1) \wedge (m1_subset.1 \\ & X1 (k1_zfmisc.1 (k2_zfmisc.1 (k15_pre_poly X0) (k15_pre_poly \\ & X0)))))) \Rightarrow (\forall X2. ((v1_relat.1 X2) \wedge (v4_relat.1 X2 X0) \wedge \\ & ((v1_funct.1 X2) \wedge ((v1_partfun1 X2 X0) \wedge ((v4_valued.0 X2) \wedge (v2_pre_poly \\ & X2)))))) \Rightarrow (X2 \in k1_relat.1 X1)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly \\
& X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v8_relat_2\ X1) \wedge (m1_subset_1 \\
& X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (k15_pre_poly \\
& X0)))))) \Rightarrow (\forall X2.((v1_relat_1\ X2) \wedge ((v4_relat_1\ X2\ X0) \wedge \\
& ((v1_funct_1\ X2) \wedge ((v1_partfun1\ X2\ X0) \wedge ((v4_valued_0\ X2) \wedge (v2_pre_poly \\
& X2)))))) \Rightarrow (\forall X3.((v1_relat_1\ X3) \wedge ((v4_relat_1\ X3\ X0) \wedge (\\
& (v1_funct_1\ X3) \wedge ((v1_partfun1\ X3\ X0) \wedge ((v4_valued_0\ X3) \wedge (v2_pre_poly \\
& X3)))))) \Rightarrow (((r1_termord\ X0\ X1\ X2\ X3) \wedge (r1_termord\ X0\ X1\ X3\ X2)) \Rightarrow (\\
& r6_pboole\ X0\ X2\ X3))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly \\
& X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v8_relat_2\ X1) \wedge (m1_subset_1 \\
& X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (k15_pre_poly \\
& X0)))))) \Rightarrow (\forall X2.((v1_relat_1\ X2) \wedge ((v4_relat_1\ X2\ X0) \wedge \\
& ((v1_funct_1\ X2) \wedge ((v1_partfun1\ X2\ X0) \wedge ((v4_valued_0\ X2) \wedge (v2_pre_poly \\
& X2)))))) \Rightarrow (r1_termord\ X0\ X1\ X2\ X2))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v1_relat_1\ X0) \Rightarrow (\forall X1.(r6_relat_2\ X0\ X1) \Leftrightarrow (\forall X2. \\
& \forall X3. \neg (X2 \in X1) \wedge ((X3 \in X1) \wedge ((X2 \neq X3) \wedge ((\neg k4_tarski\ X2\ X3 \in X0) \wedge \\
& (\neg k4_tarski\ X3\ X2 \in X0))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly \\
& X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v8_relat_2\ X1) \wedge (m1_subset_1 \\
& X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (k15_pre_poly \\
& X0)))))) \Rightarrow (\forall X2.((v1_relat_1\ X2) \wedge ((v4_relat_1\ X2\ X0) \wedge \\
& ((v1_funct_1\ X2) \wedge ((v1_partfun1\ X2\ X0) \wedge ((v4_valued_0\ X2) \wedge (v2_pre_poly \\
& X2)))))) \Rightarrow (\forall X3.((v1_relat_1\ X3) \wedge ((v4_relat_1\ X3\ X0) \wedge (\\
& (v1_funct_1\ X3) \wedge ((v1_partfun1\ X3\ X0) \wedge ((v4_valued_0\ X3) \wedge (v2_pre_poly \\
& X3)))))) \Rightarrow ((r2_termord\ X0\ X1\ X2\ X3) \Leftrightarrow ((r1_termord\ X0\ X1\ X2\ X3) \wedge (X2 \neq \\
& X3))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly \\
& X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v8_relat_2\ X1) \wedge (m1_subset_1 \\
& X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (k15_pre_poly \\
& X0)))))) \Rightarrow (\forall X2.((v1_relat_1\ X2) \wedge ((v4_relat_1\ X2\ X0) \wedge \\
& ((v1_funct_1\ X2) \wedge ((v1_partfun1\ X2\ X0) \wedge ((v4_valued_0\ X2) \wedge (v2_pre_poly \\
& X2)))))) \Rightarrow (\forall X3.((v1_relat_1\ X3) \wedge ((v4_relat_1\ X3\ X0) \wedge (\\
& (v1_funct_1\ X3) \wedge ((v1_partfun1\ X3\ X0) \wedge ((v4_valued_0\ X3) \wedge (v2_pre_poly \\
& X3)))))) \Rightarrow ((r1_termord\ X0\ X1\ X2\ X3) \Leftrightarrow (k4_tarski\ X2\ X3 \in X1))))))
\end{aligned} \tag{7}$$

Assume the following.

$$\forall X0.(v1_relat_1\ X0) \Rightarrow ((v6_relat_2\ X0) \Leftrightarrow (r6_relat_2\ X0\ (k1_relat_1\ X0))) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1))) \Rightarrow (v1_relat_1\ X2) \tag{9}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly \\
& X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v6_relat_2\ X1) \wedge (\\
& v8_relat_2\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\
& X0)\ (k15_pre_poly\ X0)))))) \Rightarrow (\forall X2.((v1_relat_1\ X2) \wedge \\
& ((v4_relat_1\ X2\ X0) \wedge ((v1_funct_1\ X2) \wedge ((v1_partfun1\ X2\ X0) \wedge (\\
& v4_valued_0\ X2) \wedge (v2_pre_poly\ X2)))))) \Rightarrow (\forall X3.((v1_relat_1 \\
& X3) \wedge ((v4_relat_1\ X3\ X0) \wedge ((v1_funct_1\ X3) \wedge ((v1_partfun1\ X3\ X0) \wedge \\
& ((v4_valued_0\ X3) \wedge (v2_pre_poly\ X3)))))) \Rightarrow ((r1_termord\ X0\ X1\ X2 \\
& X3) \Leftrightarrow (\neg r2_termord\ X0\ X1\ X3\ X2))))))
\end{aligned}$$