

t15_termord

(TMVcu6r7CKYHSvcqRMtfHRBd9ghoJ7eFJvy)

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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 $r6_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_termord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_termord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_termord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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.

$$\begin{aligned} & \forall X0. (v3_ordinal1 X0) \Rightarrow (\forall X1. ((v1_partfun1 X1 (k15_pre_poly \\ & X0)) \wedge ((v1_relat_2 X1) \wedge ((v4_relat_2 X1) \wedge ((v6_relat_2 X1) \wedge ((\\ & v8_relat_2 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k15_pre_poly \\ & X0) (k15_pre_poly X0)))))))))) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge \\ & ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge ((v1_partfun1 X2 X0) \wedge ((\\ & v4_valued_0 X2) \wedge (v2_pre_poly X2)))))) \Rightarrow (\forall X3. ((v1_relat_1 \\ & X3) \wedge ((v4_relat_1 X3 X0) \wedge ((v1_funct_1 X3) \wedge ((v1_partfun1 X3 X0) \wedge \\ & ((v4_valued_0 X3) \wedge (v2_pre_poly X3)))))) \Rightarrow ((r1_termord X0 X1 X2 \\ & X3) \vee (r1_termord X0 X1 X3 X2)))) \end{aligned} \tag{2}$$

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.

$$\begin{aligned}
& \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly \\
& X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v8_relat_2\ X1) \wedge (m1_subset_1 \\
& X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (k15_pre_poly \\
& X0)))))) \Rightarrow (\forall X2.((v1_relat_1\ X2) \wedge ((v4_relat_1\ X2\ X0) \wedge \\
& ((v1_funct_1\ X2) \wedge ((v1_partfun1\ X2\ X0) \wedge ((v4_valued_0\ X2) \wedge (v2_pre_poly \\
& X2)))))) \Rightarrow (\forall X3.((v1_relat_1\ X3) \wedge ((v4_relat_1\ X3\ X0) \wedge (\\
& (v1_funct_1\ X3) \wedge ((v1_partfun1\ X3\ X0) \wedge ((v4_valued_0\ X3) \wedge (v2_pre_poly \\
& X3)))))) \Rightarrow (((r1_termord\ X0\ X1\ X3\ X2) \Rightarrow (k2_termord\ X0\ X1\ X2\ X3 = X2)) \wedge \\
& ((\neg r1_termord\ X0\ X1\ X3\ X2) \Rightarrow (k2_termord\ X0\ X1\ X2\ X3 = X3))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly \\
& X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v8_relat_2\ X1) \wedge (m1_subset_1 \\
& X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly\ X0)\ (k15_pre_poly \\
& X0)))))) \Rightarrow (\forall X2.((v1_relat_1\ X2) \wedge ((v4_relat_1\ X2\ X0) \wedge \\
& ((v1_funct_1\ X2) \wedge ((v1_partfun1\ X2\ X0) \wedge ((v4_valued_0\ X2) \wedge (v2_pre_poly \\
& X2)))))) \Rightarrow (\forall X3.((v1_relat_1\ X3) \wedge ((v4_relat_1\ X3\ X0) \wedge (\\
& (v1_funct_1\ X3) \wedge ((v1_partfun1\ X3\ X0) \wedge ((v4_valued_0\ X3) \wedge (v2_pre_poly \\
& X3)))))) \Rightarrow (((r1_termord\ X0\ X1\ X2\ X3) \Rightarrow (k1_termord\ X0\ X1\ X2\ X3 = X2)) \wedge \\
& ((\neg r1_termord\ X0\ X1\ X2\ X3) \Rightarrow (k1_termord\ X0\ X1\ X2\ X3 = X3))))))
\end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(v3_ordinal1\ X0) \Rightarrow (\forall X1.((v1_partfun1\ X1\ (k15_pre_poly \\
& X0)) \wedge ((v1_relat_2\ X1) \wedge ((v4_relat_2\ X1) \wedge ((v6_relat_2\ X1) \wedge (\\
& v8_relat_2\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k15_pre_poly \\
& X0)\ (k15_pre_poly\ X0)))))) \Rightarrow (\forall X2.((v1_relat_1\ X2) \wedge \\
& ((v4_relat_1\ X2\ X0) \wedge ((v1_funct_1\ X2) \wedge ((v1_partfun1\ X2\ X0) \wedge (\\
& v4_valued_0\ X2) \wedge (v2_pre_poly\ X2)))))) \Rightarrow (\forall X3.((v1_relat_1 \\
& X3) \wedge ((v4_relat_1\ X3\ X0) \wedge ((v1_funct_1\ X3) \wedge ((v1_partfun1\ X3\ X0) \wedge \\
& ((v4_valued_0\ X3) \wedge (v2_pre_poly\ X3)))))) \Rightarrow ((r6_pboole\ X0\ (k1_termord \\
& X0\ X1\ X2\ X3)\ (k1_termord\ X0\ X1\ X3\ X2)) \wedge (r6_pboole\ X0\ (k2_termord\ X0 \\
& X1\ X2\ X3)\ (k2_termord\ X0\ X1\ X3\ X2))))))
\end{aligned}$$