

t49_pre_poly
(TMR5ZALin9222F1q6hqJCoCiiEW3ihxZAMw)

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Let $v3_ordinal1 : \iota \Rightarrow o$ 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 $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_valued_0 : \iota \Rightarrow o$ be given. Let $v2_pre_poly : \iota \Rightarrow o$ be given. Let $r3_pre_poly : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_pre_poly : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r6_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_pre_poly : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.(v3_ordinal1 X0) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((\\ v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge ((v4_valued_0 \\ X1) \wedge (v2_pre_poly X1)))))) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v4_relat_1 \\ X2 X0) \wedge ((v1_funct_1 X2) \wedge ((v1_partfun1 X2 X0) \wedge ((v4_valued_0 X2) \wedge \\ (v2_pre_poly X2)))))) \Rightarrow ((r2_pre_poly X0 X1 X2) \vee (r2_pre_poly X0 \\ X2 X1)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((v1_relat_1 X1) \wedge ((v4_relat_1 \\ X1 X0) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \wedge ((v1_relat_1 \\ X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))) \Rightarrow \\ ((r6_pboole X0 X1 X2) \Leftrightarrow (X1 = X2)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.(v3_ordinal1 X0) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((\\ v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge ((v4_valued_0 \\ X1) \wedge (v2_pre_poly X1)))))) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v4_relat_1 \\ X2 X0) \wedge ((v1_funct_1 X2) \wedge ((v1_partfun1 X2 X0) \wedge ((v4_valued_0 X2) \wedge \\ (v2_pre_poly X2)))))) \Rightarrow ((r1_pre_poly X0 X1 X2) \Leftrightarrow (\exists X3.(v3_ordinal1 \\ X3) \wedge ((\neg r1_xxreal_0 (k1_funct_1 X2 X3) (k1_funct_1 X1 X3)) \wedge (\forall X4. \\ (v3_ordinal1 X4) \Rightarrow ((X4 \in X3) \Rightarrow (k1_funct_1 X1 X4 = k1_funct_1 X2 X4)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\
& (v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge ((v4_valued_0 X1) \wedge (v2_pre_poly \\
& X1)))))) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge \\
& (v1_funct_1 X2) \wedge ((v1_partfun1 X2 X0) \wedge ((v4_valued_0 X2) \wedge (v2_pre_poly \\
& X2)))))) \Rightarrow ((r3_pre_poly X0 X1 X2) \Leftrightarrow (\forall X3. r1_xxreal_0 (k1_funct_1 \\
& X1 X3) (k1_funct_1 X2 X3)))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (v3_ordinal1 X0) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge ((\\
& v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge ((v4_valued_0 \\
& X1) \wedge (v2_pre_poly X1)))))) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v4_relat_1 \\
& X2 X0) \wedge ((v1_funct_1 X2) \wedge ((v1_partfun1 X2 X0) \wedge ((v4_valued_0 X2) \wedge \\
& (v2_pre_poly X2)))))) \Rightarrow ((r2_pre_poly X0 X1 X2) \Leftrightarrow ((r1_pre_poly \\
& X0 X1 X2) \vee (r6_pboole X0 X1 X2))))
\end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0. (v3_ordinal1 X0) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge ((\\
& v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge ((v4_valued_0 \\
& X1) \wedge (v2_pre_poly X1)))))) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v4_relat_1 \\
& X2 X0) \wedge ((v1_funct_1 X2) \wedge ((v1_partfun1 X2 X0) \wedge ((v4_valued_0 X2) \wedge \\
& (v2_pre_poly X2)))))) \Rightarrow ((r3_pre_poly X0 X1 X2) \Rightarrow (r2_pre_poly X0 \\
& X1 X2)))
\end{aligned}$$