

t9\_termord  
(TMG8AqG8ULsyQzbwpjTv8XLXULsvAcSNPxU)

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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  $v8\_relat\_2 : \iota \Rightarrow o$  be given. Let  $v2\_bagorder : \iota \Rightarrow \iota \Rightarrow o$  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  $k16\_pre\_poly : \iota \Rightarrow \iota$  be given. Let  $k14\_pre\_poly : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r7\_relat\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_pre\_poly : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_funct\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. k15\_pre\_poly X0 = k14\_pre\_poly X0 \quad (1)$$

Assume the following.

$$\forall X0. \neg v1\_xboole\_0 (k14\_pre\_poly X0) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\ X2 X0 X1) \Rightarrow (m1\_subset\_1 X2 X0)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. m2\_subset\_1 (k16\_pre\_poly X0) (k14\_pre\_poly X0) (k15\_pre\_poly X0) \quad (4)$$

Assume the following.

$$\forall X0. m1\_subset\_1 (k15\_pre\_poly X0) (k1\_zfmisc\_1 (k14\_pre\_poly X0)) \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v3\_ordinal1\ X0) \Rightarrow (\forall X1.((v1\_partfun1\ X1\ (k15\_pre\_poly \\
& X0)) \wedge ((v1\_relat\_2\ X1) \wedge ((v4\_relat\_2\ X1) \wedge ((v8\_relat\_2\ X1) \wedge (m1\_subset\_1 \\
& X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k15\_pre\_poly\ X0)\ (k15\_pre\_poly \\
& X0)))))) \Rightarrow ((v2\_bagorder\ X1\ X0) \Leftrightarrow ((r7\_relat\_2\ X1\ (k15\_pre\_poly \\
& X0)) \wedge ((\forall X2.((v1\_relat\_1\ X2) \wedge ((v4\_relat\_1\ X2\ X0) \wedge ((v1\_funct\_1 \\
& X2) \wedge ((v1\_partfun1\ X2\ X0) \wedge ((v4\_valued\_0\ X2) \wedge (v2\_pre\_poly\ X2)))))) \Rightarrow \\
& (k4\_tarski\ (k16\_pre\_poly\ X0)\ X2 \in X1)) \wedge (\forall X2.((v1\_relat\_1 \\
& X2) \wedge ((v4\_relat\_1\ X2\ X0) \wedge ((v1\_funct\_1\ X2) \wedge ((v1\_partfun1\ X2\ X0) \wedge \\
& ((v4\_valued\_0\ X2) \wedge (v2\_pre\_poly\ X2)))))) \Rightarrow (\forall X3.((v1\_relat\_1 \\
& X3) \wedge ((v4\_relat\_1\ X3\ X0) \wedge ((v1\_funct\_1\ X3) \wedge ((v1\_partfun1\ X3\ X0) \wedge \\
& ((v4\_valued\_0\ X3) \wedge (v2\_pre\_poly\ X3)))))) \Rightarrow (\forall X4.((v1\_relat\_1 \\
& X4) \wedge ((v4\_relat\_1\ X4\ X0) \wedge ((v1\_funct\_1\ X4) \wedge ((v1\_partfun1\ X4\ X0) \wedge \\
& ((v4\_valued\_0\ X4) \wedge (v2\_pre\_poly\ X4)))))) \Rightarrow ((k4\_tarski\ X2\ X3 \in X1) \Rightarrow \\
& (k4\_tarski\ (k11\_pre\_poly\ X0\ X2\ X4)\ (k11\_pre\_poly\ X0\ X3\ X4) \in X1))))))))) \\
& \hspace{15em} (6)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v3\_ordinal1\ X0) \Rightarrow (\forall X1.((v1\_partfun1\ X1\ (k15\_pre\_poly \\
& X0)) \wedge ((v1\_relat\_2\ X1) \wedge ((v4\_relat\_2\ X1) \wedge ((v8\_relat\_2\ X1) \wedge (m1\_subset\_1 \\
& X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k15\_pre\_poly\ X0)\ (k15\_pre\_poly \\
& X0)))))) \Rightarrow (\forall X2.((v1\_relat\_1\ X2) \wedge ((v4\_relat\_1\ X2\ X0) \wedge \\
& ((v1\_funct\_1\ X2) \wedge ((v1\_partfun1\ X2\ X0) \wedge ((v4\_valued\_0\ X2) \wedge (v2\_pre\_poly \\
& X2)))))) \Rightarrow (\forall X3.((v1\_relat\_1\ X3) \wedge ((v4\_relat\_1\ X3\ X0) \wedge ( \\
& (v1\_funct\_1\ X3) \wedge ((v1\_partfun1\ X3\ X0) \wedge ((v4\_valued\_0\ X3) \wedge (v2\_pre\_poly \\
& X3)))))) \Rightarrow ((r1\_termord\ X0\ X1\ X2\ X3) \Leftrightarrow (k4\_tarski\ X2\ X3 \in X1)))))) \\
& \hspace{15em} (7)
\end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k15\_pre\_poly\ X0))) \Rightarrow (v4\_funct\_1\ X1) \hspace{10em} (8)$$

Assume the following.

$$\forall X0.(v4\_funct\_1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ X0) \Rightarrow (v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1)) \hspace{10em} (9)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k15\_pre\_poly\ X0)))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ X1) \Rightarrow ((v1\_partfun1\ X2\ X0) \wedge ((v4\_valued\_0\ X2) \wedge (v2\_pre\_poly\ X2)))) \hspace{10em} (10)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k15\_pre\_poly\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ X1) \Rightarrow (v4\_relat\_1\ X2\ X0)) \hspace{10em} (11)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(v3\_ordinal1\ X0) \Rightarrow (\forall X1.((v1\_partfun1\ X1\ (k15\_pre\_poly\ X0)) \wedge ((v1\_relat\_2\ X1) \wedge ((v4\_relat\_2\ X1) \wedge ((v8\_relat\_2\ X1) \wedge ((v2\_bagorder\ X1\ X0) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k15\_pre\_poly\ X0)\ (k15\_pre\_poly\ X0)))))))))) \Rightarrow (\forall X2.((v1\_relat\_1\ X2) \wedge ((v4\_relat\_1\ X2\ X0) \wedge ((v1\_funct\_1\ X2) \wedge ((v1\_partfun1\ X2\ X0) \wedge ((v4\_valued\_0\ X2) \wedge (v2\_pre\_poly\ X2)))))) \Rightarrow (r1\_termord\ X0\ X1\ (k16\_pre\_poly\ X0\ X2))) \end{aligned}$$