

# t46\_pre\_poly (TMKBgcAiaZcCYcXM- FyxLcG4GvXZpA7xk92o)

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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  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r3\_pre\_poly : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 \\ & X1 X0) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_partfun1 X1 X0) \wedge ((v4\_valued\_0 X1) \wedge \\ & (v2\_pre\_poly X1)))))) \wedge ((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 X0) \wedge \\ & ((v1\_funct\_1 X2) \wedge ((v1\_partfun1 X2 X0) \wedge ((v4\_valued\_0 X2) \wedge (v2\_pre\_poly \\ & X2))))))) \Rightarrow (r3\_pre\_poly X0 X1 X1) \end{aligned} \tag{1}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v4\_relat\_1 X1 X0)) \Rightarrow (k1\_relset\_1 X0 X1 = k9\_xtuple\_0 X1) \tag{3}$$

Assume the following.

$$k1\_xboole\_0 = the (\lambda X0 : \iota. v1\_xboole\_0 X0) \tag{4}$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v4\_relat\_1 X1 X0)) \Rightarrow (v1\_partfun1 X1 X0) \Leftrightarrow (k1\_relset\_1 X0 X1 = X0) \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. \forall X2. \\ & ((X1 \in k9\_xtuple\_0 X0) \Rightarrow ((X2 = k1\_funct\_1 X0 X1) \Leftrightarrow (k4\_tarski X1 X2 \in \\ & X0))) \wedge ((\neg X1 \in k9\_xtuple\_0 X0) \Rightarrow ((X2 = k1\_funct\_1 X0 X1) \Leftrightarrow (X2 = k1\_xboole\_0))) \end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 X0) \wedge \\
& (v1\_funct\_1 X1) \wedge ((v1\_partfun1 X1 X0) \wedge ((v4\_valued\_0 X1) \wedge (v2\_pre\_poly \\
& X1)))))) \Rightarrow (\forall X2. ((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 X0) \wedge \\
& (v1\_funct\_1 X2) \wedge ((v1\_partfun1 X2 X0) \wedge ((v4\_valued\_0 X2) \wedge (v2\_pre\_poly \\
& X2)))))) \Rightarrow ((r3\_pre\_poly X0 X1 X2) \Leftrightarrow (\forall X3. r1\_xxreal\_0 (k1\_funct\_1 \\
& X1 X3) (k1\_funct\_1 X2 X3)))
\end{aligned} \tag{7}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 X0) \wedge \\
& (v1\_funct\_1 X1) \wedge ((v1\_partfun1 X1 X0) \wedge ((v4\_valued\_0 X1) \wedge (v2\_pre\_poly \\
& X1)))))) \Rightarrow (\forall X2. ((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 X0) \wedge \\
& (v1\_funct\_1 X2) \wedge ((v1\_partfun1 X2 X0) \wedge ((v4\_valued\_0 X2) \wedge (v2\_pre\_poly \\
& X2)))))) \Rightarrow ((\forall X3. (X3 \in X0) \Rightarrow (r1\_xxreal\_0 (k1\_funct\_1 X1 X3) \\
& (k1\_funct\_1 X2 X3))) \Rightarrow (r3\_pre\_poly X0 X1 X2))
\end{aligned}$$