

t56\_pzfmisc1  
(TMciYAb75EibHFz16RqF1UE8jTFSsUeaono)

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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  $r6\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_pboole : \iota \Rightarrow \iota$  be given. Let  $k1\_pzfmisc1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_pzfmisc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 X0) \wedge \\ & (v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 X0))) \Rightarrow (\forall X2. ((v1\_relat\_1 \\ & X2) \wedge ((v4\_relat\_1 X2 X0) \wedge ((v1\_funct\_1 X2) \wedge (v1\_partfun1 X2 X0)))) \Rightarrow \\ & ((r6\_pboole X0 (k4\_pboole X0 X1 X2) (k1\_pboole X0)) \Leftrightarrow (r2\_pboole \\ & X0 X1 X2))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 X0) \wedge \\ & (v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 X0))) \Rightarrow (\forall X2. ((v1\_relat\_1 \\ & X2) \wedge ((v4\_relat\_1 X2 X0) \wedge ((v1\_funct\_1 X2) \wedge (v1\_partfun1 X2 X0)))) \Rightarrow \\ & (\forall X3. ((v1\_relat\_1 X3) \wedge ((v4\_relat\_1 X3 X0) \wedge ((v1\_funct\_1 \\ & X3) \wedge (v1\_partfun1 X3 X0)))) \Rightarrow ((\neg(\neg r6\_pboole X0 X1 (k1\_pboole X0)) \wedge \\ & ((\neg r6\_pboole X0 X1 (k1\_pzfmisc1 X0 X2)) \wedge ((\neg r6\_pboole X0 X1 (k1\_pzfmisc1 \\ & X0 X3)) \wedge (\neg r6\_pboole X0 X1 (k2\_pzfmisc1 X0 X2 X3)))))) \Rightarrow (r2\_pboole \\ & X0 X1 (k2\_pzfmisc1 X0 X2 X3)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 \\ & X1 X0) \wedge ((v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 X0)))) \wedge ((v1\_relat\_1 \\ & X2) \wedge ((v4\_relat\_1 X2 X0) \wedge ((v1\_funct\_1 X2) \wedge (v1\_partfun1 X2 X0)))) \Rightarrow \\ & ((v1\_relat\_1 (k2\_pzfmisc1 X0 X1 X2)) \wedge ((v4\_relat\_1 (k2\_pzfmisc1 \\ & X0 X1 X2) X0) \wedge ((v1\_funct\_1 (k2\_pzfmisc1 X0 X1 X2)) \wedge (v1\_partfun1 \\ & (k2\_pzfmisc1 X0 X1 X2) X0)))) \end{aligned} \tag{3}$$

**Theorem 1**

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 X0) \wedge \\ & (v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 X0))) \Rightarrow (\forall X2. ((v1\_relat\_1 \\ & X2) \wedge ((v4\_relat\_1 X2 X0) \wedge ((v1\_funct\_1 X2) \wedge (v1\_partfun1 X2 X0)))) \Rightarrow \\ & (\forall X3. ((v1\_relat\_1 X3) \wedge ((v4\_relat\_1 X3 X0) \wedge ((v1\_funct\_1 \\ & X3) \wedge (v1\_partfun1 X3 X0)))) \Rightarrow ((\neg(\neg r6\_pboole X0 X1 (k1\_pboole X0)) \wedge \\ & (\neg r6\_pboole X0 X1 (k1\_pzfmisc1 X0 X2)) \wedge ((\neg r6\_pboole X0 X1 (k1\_pzfmisc1 \\ & X0 X3)) \wedge (\neg r6\_pboole X0 X1 (k2\_pzfmisc1 X0 X2 X3)))))) \Rightarrow (r6\_pboole \\ & X0 (k4\_pboole X0 X1 (k2\_pzfmisc1 X0 X2 X3)) (k1\_pboole X0)))) \end{aligned}$$