

t22\_mboolean  
(TMd4p693HaD1RDLqZGC7Piu3bFyDhHxHvQK)

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Let  $r6\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_mboolean : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_tarski : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. (X1 \in X0) \Rightarrow (k1\_funct\_1 (k2\_funcop\_1 X0 X2) X1 = X2) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 \\ & X1 X0) \wedge ((v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 X0)))) \wedge ((v1\_relat\_1 \\ & X2) \wedge ((v4\_relat\_1 X2 X0) \wedge ((v1\_funct\_1 X2) \wedge (v1\_partfun1 X2 X0)))) \Rightarrow \\ & ((r6\_pboole X0 X1 X2) \Leftrightarrow (X1 = X2)) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. k7\_funcop\_1 X0 X1 = k2\_funcop\_1 X0 X1 \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v1\_relat\_1 (k2\_funcop\_1 X0 X1)) \wedge ((v4\_relat\_1 \\ & (k2\_funcop\_1 X0 X1) X0) \wedge ((v1\_funct\_1 (k2\_funcop\_1 X0 X1)) \wedge (v1\_partfun1 \\ & (k2\_funcop\_1 X0 X1) X0))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 X0) \wedge \\ & (v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 X0))) \Rightarrow (\forall X2. ((v1\_relat\_1 \\ & X2) \wedge ((v4\_relat\_1 X2 X0) \wedge ((v1\_funct\_1 X2) \wedge (v1\_partfun1 X2 X0)))) \Rightarrow \\ & ((X2 = k2\_mboolean X0 X1) \Leftrightarrow (\forall X3. (X3 \in X0) \Rightarrow (k1\_funct\_1 X2 X3 = \\ & k3\_tarski (k1\_funct\_1 X1 X3)))) \end{aligned} \quad (5)$$

**Theorem 1**

$\forall X0.\forall X1.r6\_pboole\ X0\ (k2\_mboolean\ X0\ (k7\_funcop\_1\ X0\ X1))\ (k7\_funcop\_1\ X0\ (k3\_tarSKI\ X1))$