

t85_pboole
(TMcaCTmx3V5aqzsPLXfXtXodxFQamq99csR)

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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 $k5_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_pboole : \iota \Rightarrow \iota$ be given. Let $k4_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0))) \Rightarrow (r6_pboole X0 (k4_pboole X0 X1 X1) (k1_pboole X0)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))))) \Rightarrow (k2_pboole X0 X1 X1 = X1) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))))) \Rightarrow ((v1_relat_1 (k4_pboole X0 X1 X2)) \wedge ((v4_relat_1 (k4_pboole X0 X1 X2) X0) \wedge ((v1_funct_1 (k4_pboole X0 X1 X2)) \wedge (v1_partfun1 (k4_pboole X0 X1 X2) X0)))))) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0))) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))) \Rightarrow (k5_pboole X0 X1 X2 = k2_pboole X0 (k4_pboole X0 X1 X2) (k4_pboole X0 X2 X1))) \quad (4)$$

Theorem 1

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge(v1_funct_1 X1)\wedge(v1_partfun1 X1 X0)))\Rightarrow(r6_pboole X0 (k5_pboole X0 X1 X1) (k1_pboole X0))$$