

t11_pcs_0
(TMS2yoQbjcT4qAMKz9Dcqhsnvw6DHCnQ4Gq)

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Let $v1_xboole_0 : \iota \Rightarrow o$ 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. Let $v16_pcs_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k17_pcs_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k15_pcs_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l2_pcs_0 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\ & (v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge (v16_pcs_0 X1)))) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 (k17_pcs_0 X0 X1))) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (u1_struct_0 (k17_pcs_0 X0 X1))) \Rightarrow ((r1_orders_2 \\ & (k17_pcs_0 X0 X1) X2 X3) \Leftrightarrow (\exists X4. \exists X5. (l2_pcs_0 X5) \wedge \\ & (\exists X6. (m1_subset_1 X6 (u1_struct_0 X5)) \wedge (\exists X7. (m1_subset_1 \\ & X7 (u1_struct_0 X5)) \wedge ((X4 \in X0) \wedge ((X5 = k1_funct_1 X1 X4) \wedge ((X6 = X2) \wedge \\ & ((X7 = X3) \wedge (r1_orders_2 X5 X6 X7)))))))))) \quad (2) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 \\ & X1) \wedge ((v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge \\ & (v16_pcs_0 X1)))))) \wedge (m1_subset_1 X2 X0)) \Rightarrow (k15_pcs_0 X0 X1 X2 = \\ & k1_funct_1 X1 X2) \quad (3) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge ((v1_relat_1 \\ & X1) \wedge ((v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge \\ & (v16_pcs_0 X1)))))) \wedge (m1_subset_1 X2 X0)) \Rightarrow (l2_pcs_0 (k15_pcs_0 \\ & X0 X1 X2)) \quad (4) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \Rightarrow ((m1_subset_1 X1 X0) \Leftrightarrow \\ & (X1 \in X0))) \wedge ((v1_xboole_0 X0) \Rightarrow ((m1_subset_1 X1 X0) \Leftrightarrow (v1_xboole_0 \\ & X1))) \end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge (\\ & (v4_relat_1 X1 X0) \wedge (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0) \wedge (v16_pcs_0 \\ & X1)))) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 (k17_pcs_0 \\ & X0 X1))) \Rightarrow (\forall X3. (m1_subset_1 X3 (u1_struct_0 (k17_pcs_0 \\ & X0 X1))) \Rightarrow ((r1_orders_2 (k17_pcs_0 X0 X1) X2 X3) \Leftrightarrow (\exists X4. (m1_subset_1 \\ & X4 X0) \wedge (\exists X5. (m1_subset_1 X5 (u1_struct_0 (k15_pcs_0 X0 \\ & X1 X4))) \wedge (\exists X6. (m1_subset_1 X6 (u1_struct_0 (k15_pcs_0 \\ & X0 X1 X4))) \wedge ((X5 = X2) \wedge ((X6 = X3) \wedge (r1_orders_2 (k15_pcs_0 X0 X1 X4) \\ & X5 X6)))))))))) \end{aligned}$$