

t8_arytm_1
(TMPmhbj6ACnEkeyJjzG7uWow7KBiB91M1c7)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_arytm_2 : \iota$ be given. Let $r1_arytm_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_arytm_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_arytm_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k2_arytm_2) \Rightarrow (\forall X1.(m1_subset_1 \\ X1 k2_arytm_2) \Rightarrow (\neg(r1_arytm_2 X0 X1) \wedge (\forall X2.(m1_subset_1 \\ X2 k2_arytm_2) \Rightarrow (k7_arytm_2 X0 X2 \neq X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k2_arytm_2) \Rightarrow (\forall X1.(m1_subset_1 \\ X1 k2_arytm_2) \Rightarrow (\forall X2.(m1_subset_1 X2 k2_arytm_2) \Rightarrow ((X0 = \\ k7_arytm_2 X1 X2) \Rightarrow (r1_arytm_2 X2 X0)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k2_arytm_2) \Rightarrow (\forall X1.(m1_subset_1 \\ X1 k2_arytm_2) \Rightarrow (\forall X2.(m1_subset_1 X2 k2_arytm_2) \Rightarrow (k8_arytm_2 \\ X0 (k7_arytm_2 X1 X2) = k7_arytm_2 (k8_arytm_2 X0 X1) (k8_arytm_2 \\ X0 X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1_subset_1 X0 k2_arytm_2) \wedge (m1_subset_1 \\ X1 k2_arytm_2)) \Rightarrow (m1_subset_1 (k8_arytm_2 X0 X1) k2_arytm_2) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1_subset_1 X0 k2_arytm_2) \wedge (m1_subset_1 \\ X1 k2_arytm_2)) \Rightarrow (m1_subset_1 (k7_arytm_2 X0 X1) k2_arytm_2) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1_subset_1 X0 k2_arytm_2) \wedge (m1_subset_1 \\ X1 k2_arytm_2)) \Rightarrow (k8_arytm_2 X0 X1 = k8_arytm_2 X1 X0) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1\ X0\ k2_arytm_2)\wedge(m1_subset_1\ X1\ k2_arytm_2))\Rightarrow(k7_arytm_2\ X0\ X1 = k7_arytm_2\ X1\ X0) \quad (7)$$

Theorem 1

$$\forall X0.(m1_subset_1\ X0\ k2_arytm_2)\Rightarrow(\forall X1.(m1_subset_1\ X1\ k2_arytm_2)\Rightarrow(\forall X2.(m1_subset_1\ X2\ k2_arytm_2)\Rightarrow((r1_arytm_2\ X0\ X1)\Rightarrow(r1_arytm_2\ (k8_arytm_2\ X0\ X2)\ (k8_arytm_2\ X1\ X2))))))$$