

t82_arytm_3

(TMa4B6WQtznzNJQ86iHJJpzXQt2Q9sQM8w2K)

October 27, 2020

Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_arytm_3 : \iota$ be given. Let $r3_arytm_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_arytm_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_arytm_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k5_arytm_3) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k5_arytm_3) \Rightarrow (\forall X2.(m1_subset_1 X2 k5_arytm_3) \Rightarrow (k10_arytm_3 \\ & X0 (k9_arytm_3 X1 X2) = k9_arytm_3 (k10_arytm_3 X0 X1) (k10_arytm_3 \\ & X0 X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k5_arytm_3) \wedge (m1_subset_1 X1 k5_arytm_3)) \Rightarrow (m1_subset_1 (k10_arytm_3 X0 X1) k5_arytm_3) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k5_arytm_3) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k5_arytm_3) \Rightarrow ((r3_arytm_3 X0 X1) \Leftrightarrow (\exists X2.(m1_subset_1 \\ & X2 k5_arytm_3) \wedge (X1 = k9_arytm_3 X0 X2)))) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k5_arytm_3) \wedge (m1_subset_1 X1 k5_arytm_3)) \Rightarrow (k10_arytm_3 X0 X1 = k10_arytm_3 X1 X0) \tag{4}$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k5_arytm_3) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k5_arytm_3) \Rightarrow (\forall X2.(m1_subset_1 X2 k5_arytm_3) \Rightarrow ((r3_arytm_3 \\ & X0 X1) \Rightarrow (r3_arytm_3 (k10_arytm_3 X0 X2) (k10_arytm_3 X1 X2)))))) \end{aligned}$$