

t66_arytm_3
(TMUB9fQQP9bP2aWPSooQhQxqzwwv5MpGU4a)

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 $k9_arytm_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_arytm_3 : \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Assume the following.

$$\forall X0.(m1_subset_1 X0 k5_arytm_3) \Rightarrow (\forall X1.(m1_subset_1 X1 k5_arytm_3) \Rightarrow ((k9_arytm_3 X0 X1 = k11_arytm_3) \Rightarrow (X0 = k11_arytm_3))) \quad (1)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k5_arytm_3) \Rightarrow (\forall X1.(m1_subset_1 X1 k5_arytm_3) \Rightarrow (\forall X2.(m1_subset_1 X2 k5_arytm_3) \Rightarrow ((k9_arytm_3 X0 X1 = k9_arytm_3 X2 X1) \Rightarrow (X0 = X2)))) \quad (2)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k5_arytm_3) \Rightarrow (\forall X1.(m1_subset_1 X1 k5_arytm_3) \Rightarrow (\forall X2.(m1_subset_1 X2 k5_arytm_3) \Rightarrow (k9_arytm_3 (k9_arytm_3 X0 X1) X2 = k9_arytm_3 X0 (k9_arytm_3 X1 X2)))) \quad (3)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k5_arytm_3) \Rightarrow (k9_arytm_3 X0 k11_arytm_3 = X0) \quad (4)$$

Assume the following.

$$k11_arytm_3 = k1_xboole_0 \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k5_arytm_3) \wedge (m1_subset_1 X1 k5_arytm_3)) \Rightarrow (m1_subset_1 (k9_arytm_3 X0 X1) k5_arytm_3) \quad (6)$$

Assume the following.

$$m1_subset_1 k11_arytm_3 k5_arytm_3 \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k5_arytm_3) \Rightarrow (\forall X1.(m1_subset_1 \\ X1 k5_arytm_3) \Rightarrow ((r3_arytm_3 X0 X1) \Leftrightarrow (\exists X2.(m1_subset_1 \\ X2 k5_arytm_3) \wedge (X1 = k9_arytm_3 X0 X2)))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1_subset_1 X0 k5_arytm_3) \wedge (m1_subset_1 \\ X1 k5_arytm_3)) \Rightarrow (k9_arytm_3 X0 X1 = k9_arytm_3 X1 X0) \end{aligned} \quad (9)$$

Theorem 1

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k5_arytm_3) \Rightarrow (\forall X1.(m1_subset_1 \\ X1 k5_arytm_3) \Rightarrow (((r3_arytm_3 X0 X1) \wedge (r3_arytm_3 X1 X0)) \Rightarrow (X0 = \\ X1))) \end{aligned}$$