

t22_arytm_1
(TMb1nmRziaWtQTCxW7Zwj9nwhLwJtqndEPW)

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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 $k2_arytm_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_arytm_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_arytm_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k2_arytm_2) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k2_arytm_2) \Rightarrow (\forall X2.(m1_subset_1 X2 k2_arytm_2) \Rightarrow ((\neg r1_arytm_2 \\ & X0 X1) \Rightarrow (k2_arytm_1 X2 (k1_arytm_1 X0 X1) = k2_arytm_1 (k7_arytm_2 \\ & X2 X1) X0)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k2_arytm_2) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k2_arytm_2) \Rightarrow (\forall X2.(m1_subset_1 X2 k2_arytm_2) \Rightarrow ((r1_arytm_2 \\ & X0 X1) \Rightarrow (k7_arytm_2 X2 (k1_arytm_1 X1 X0) = k2_arytm_1 (k7_arytm_2 \\ & X2 X1) X0)))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 X0 k2_arytm_2) \wedge (m1_subset_1 X1 k2_arytm_2)) \Rightarrow (m1_subset_1 (k1_arytm_1 X0 X1) k2_arytm_2) \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 X0 k2_arytm_2) \wedge (m1_subset_1 X1 k2_arytm_2)) \Rightarrow (k7_arytm_2 X0 X1 = k7_arytm_2 X1 X0) \tag{4}$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k2_arytm_2) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k2_arytm_2) \Rightarrow (\forall X2.(m1_subset_1 X2 k2_arytm_2) \Rightarrow ((r1_arytm_2 \\ & X0 X1) \Rightarrow ((r1_arytm_2 X0 X2) \vee (k2_arytm_1 X1 (k1_arytm_1 X0 X2) = k7_arytm_2 \\ & (k1_arytm_1 X1 X0) X2)))))) \end{aligned}$$