t26_arytm_1 (TMNrYdv-FoWdGb5yrwApaMZihekxFmzeSHb5)

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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 $k1\_arytm\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_arytm\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11\_arytm\_3 : \iota$ be given. Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k2\_arytm\_2) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ k2\_arytm\_2) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ k2\_arytm\_2) \Rightarrow ((r1\_arytm\_2\ X0\ X1) \Rightarrow (r1\_arytm\_2\ (k8\_arytm\_2\ X0\ X2)\ (k8\_arytm\_2\ X1\ X2))))) \tag{1}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k2\_arytm\_2) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ k2\_arytm\_2) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ k2\_arytm\_2) \Rightarrow (k8\_arytm\_2\ X0\ (k1\_arytm\_1\ X1\ X2) = k1\_arytm\_1\ (k8\_arytm\_2\ X0\ X1)\ (k8\_arytm\_2\ X0\ X2)))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1\ X0\ k2\_arytm\_2) \wedge (m1\_subset\_1\ X1\ k2\_arytm\_2)) \Rightarrow (m1\_subset\_1\ (k8\_arytm\_2\ X0\ X1)\ k2\_arytm\_2) \tag{3}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k2\_arytm\_2) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ k2\_arytm\_2) \Rightarrow (((r1\_arytm\_2\ X1\ X0) \Rightarrow (k2\_arytm\_1\ X0\ X1 = k1\_arytm\_1\ X0\ X1)) \wedge ((\neg r1\_arytm\_2\ X1\ X0) \Rightarrow (k2\_arytm\_1\ X0\ X1 = k4\_tarski\ k11\_arytm\_3\ (k1\_arytm\_1\ X1\ X0))))) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1\ X0\ k2\_arytm\_2) \wedge (m1\_subset\_1\ X1\ k2\_arytm\_2)) \Rightarrow (k8\_arytm\_2\ X0\ X1 = k8\_arytm\_2\ X1\ X0) \tag{5}$$

Theorem 1

$$\forall X0.(m1\_subset\_1\ X0\ k2\_arytm\_2)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ k2\_arytm\_2)\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ k2\_arytm\_2)\Rightarrow((r1\_arytm\_2\ X0\ X1)\Rightarrow(k8\_arytm\_2\ X2\ (k1\_arytm\_1\ X1\ X0) = k2\_arytm\_1\ (k8\_arytm\_2\ X2\ X1)\ (k8\_arytm\_2\ X2\ X0)))))$$