

t9\_arytm\_1 (TMN-  
hoaUwn4meemr6CdE9WVNNbPReFkQcJ3j)

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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  $k1\_arytm\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_arytm\_3 : \iota$  be given. Let  $k7\_arytm\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_arytm\_2 : \iota \Rightarrow \iota$  be given. Let  $k5\_arytm\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_arytm\_2 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 X0 k2\_arytm\_2) \wedge (m1\_subset\_1 X1 k2\_arytm\_2)) \Rightarrow (m1\_subset\_1 (k1\_arytm\_1 X0 X1) k2\_arytm\_2) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. (m1\_subset\_1 X0 k2\_arytm\_2) \Rightarrow (\forall X1. (m1\_subset\_1 X1 k2\_arytm\_2) \Rightarrow (((X1 = k11\_arytm\_3) \Rightarrow (k7\_arytm\_2 X0 X1 = X0)) \wedge \\ ((X0 = k11\_arytm\_3) \Rightarrow (k7\_arytm\_2 X0 X1 = X1)) \wedge (\neg (X1 \neq k11\_arytm\_3) \wedge \\ ((X0 \neq k11\_arytm\_3) \wedge (k7\_arytm\_2 X0 X1 \neq k4\_arytm\_2 (k5\_arytm\_2 \\ (k3\_arytm\_2 X0) (k3\_arytm\_2 X1)))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. (m1\_subset\_1 X0 k2\_arytm\_2) \Rightarrow (\forall X1. (m1\_subset\_1 X1 k2\_arytm\_2) \Rightarrow (\forall X2. (m1\_subset\_1 X2 k2\_arytm\_2) \Rightarrow (((r1\_arytm\_2 X1 X0) \Rightarrow ((X2 = k1\_arytm\_1 X0 X1) \Leftrightarrow (k7\_arytm\_2 X2 X1 = X0))) \wedge ((\neg r1\_arytm\_2 X1 X0) \Rightarrow ((X2 = k1\_arytm\_1 X0 X1) \Leftrightarrow (X2 = k11\_arytm\_3)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 X0 k2\_arytm\_2) \wedge (m1\_subset\_1 X1 k2\_arytm\_2)) \Rightarrow ((r1\_arytm\_2 X0 X1) \vee (r1\_arytm\_2 X1 X0)) \quad (4)$$

**Theorem 1**

$$\forall X0. (m1\_subset\_1 X0 k2\_arytm\_2) \Rightarrow (\forall X1. (m1\_subset\_1 X1 k2\_arytm\_2) \Rightarrow (\neg (\neg r1\_arytm\_2 X0 X1) \wedge (k1\_arytm\_1 X0 X1 = k11\_arytm\_3)))$$