

t85\_arytm\_3  
(TMTA5ZN3DiA5CHqtNLfrjeCL67oqhQkmTUp)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_arytm\_3 : \iota$  be given. Let  $k9\_arytm\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r3\_arytm\_3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k5\_arytm\_3) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 k5\_arytm\_3) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k5\_arytm\_3) \Rightarrow ((r3\_arytm\_3 \\ & (k9\_arytm\_3 X0 X1) (k9\_arytm\_3 X2 X1)) \Leftrightarrow (r3\_arytm\_3 X0 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k5\_arytm\_3) \wedge (m1\_subset\_1 X1 k5\_arytm\_3)) \Rightarrow (k9\_arytm\_3 X0 X1 = k9\_arytm\_3 X1 X0) \quad (2)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k5\_arytm\_3) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 k5\_arytm\_3) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k5\_arytm\_3) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 k5\_arytm\_3) \Rightarrow (((k9\_arytm\_3 X0 X1 = k9\_arytm\_3 X2 \\ & X3) \wedge (r3\_arytm\_3 X0 X2)) \Rightarrow (r3\_arytm\_3 X3 X1)))))) \end{aligned}$$