

t90\_arytm\_3 (TMck-  
QUwiN7yTVy5r4evhnTpWWE2JJcGvQ6t)

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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. Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k5\_arytm\_3) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 k5\_arytm\_3) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k5\_arytm\_3) \Rightarrow (\neg(r3\_arytm\_3 \\ & X0 X1) \wedge ((r3\_arytm\_3 X1 (k9\_arytm\_3 X0 X2)) \wedge (\forall X3.(m1\_subset\_1 \\ & X3 k5\_arytm\_3) \Rightarrow (\neg(X1 = k9\_arytm\_3 X0 X3) \wedge (r3\_arytm\_3 X3 X2))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k5\_arytm\_3) \Rightarrow (r3\_arytm\_3 k11\_arytm\_3 X0) \quad (2)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k5\_arytm\_3) \Rightarrow (k9\_arytm\_3 X0 k11\_arytm\_3 = X0) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((m1\_subset\_1 X0 k5\_arytm\_3) \wedge (m1\_subset\_1 \\ & X1 k5\_arytm\_3)) \Rightarrow (m1\_subset\_1 (k9\_arytm\_3 X0 X1) k5\_arytm\_3) \end{aligned} \quad (4)$$

Assume the following.

$$m1\_subset\_1 k11\_arytm\_3 k5\_arytm\_3 \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((m1\_subset\_1 X0 k5\_arytm\_3) \wedge (m1\_subset\_1 \\ & X1 k5\_arytm\_3)) \Rightarrow ((r3\_arytm\_3 X0 X1) \vee (r3\_arytm\_3 X1 X0)) \end{aligned} \quad (6)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k5\_arytm\_3) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 k5\_arytm\_3) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k5\_arytm\_3) \Rightarrow (\neg(\neg \\ & r3\_arytm\_3 (k9\_arytm\_3 X1 X2) X0) \wedge ((X2 \neq k11\_arytm\_3) \wedge (\forall X3. \\ & (m1\_subset\_1 X3 k5\_arytm\_3) \Rightarrow (\forall X4.(m1\_subset\_1 X4 k5\_arytm\_3) \Rightarrow \\ & (\neg(X0 = k9\_arytm\_3 X3 X4) \wedge ((r3\_arytm\_3 X3 X1) \wedge ((r3\_arytm\_3 X4 X2) \wedge \\ & (X4 \neq X2)))))))))) \end{aligned}$$