

t19\_arytm\_2  
(TMNfx9QKhYi5sH5aLT3Wbr4R7x7dgSgdrEX)

October 27, 2020

Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_arytm\_2 : \iota$  be given. Let  $k7\_arytm\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_arytm\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k11\_arytm\_3 : \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k2\_arytm\_2) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 k2\_arytm\_2) \Rightarrow (\neg(r1\_arytm\_2 X0 X1) \wedge (\forall X2.(m1\_subset\_1 \\ X2 k2\_arytm\_2) \Rightarrow (k7\_arytm\_2 X0 X2 \neq X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k2\_arytm\_2) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 k2\_arytm\_2) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k2\_arytm\_2) \Rightarrow (k7\_arytm\_2 \\ X0 (k7\_arytm\_2 X1 X2) = k7\_arytm\_2 (k7\_arytm\_2 X0 X1) X2))) \end{aligned} \quad (2)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k2\_arytm\_2) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 k2\_arytm\_2) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k2\_arytm\_2) \Rightarrow ((k7\_arytm\_2 \\ X0 X1 = k7\_arytm\_2 X0 X2) \Rightarrow (X1 = X2)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k2\_arytm\_2) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 k2\_arytm\_2) \Rightarrow (\neg \forall X2.(m1\_subset\_1 X2 k2\_arytm\_2) \Rightarrow ((k7\_arytm\_2 \\ X0 X2 \neq X1) \wedge (k7\_arytm\_2 X1 X2 \neq X0)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k2\_arytm\_2) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 k2\_arytm\_2) \Rightarrow ((k7\_arytm\_2 X0 X1 = X0) \Rightarrow (X1 = k11\_arytm\_3))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k2\_arytm\_2)\wedge(m1\_subset\_1 X1 k2\_arytm\_2))\Rightarrow(m1\_subset\_1 (k7\_arytm\_2 X0 X1) k2\_arytm\_2) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k2\_arytm\_2)\wedge(m1\_subset\_1 X1 k2\_arytm\_2))\Rightarrow((r1\_arytm\_2 X0 X1)\vee(r1\_arytm\_2 X1 X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k2\_arytm\_2)\wedge(m1\_subset\_1 X1 k2\_arytm\_2))\Rightarrow(k7\_arytm\_2 X0 X1 = k7\_arytm\_2 X1 X0) \quad (9)$$

**Theorem 1**

$$\forall X0.(m1\_subset\_1 X0 k2\_arytm\_2)\Rightarrow(\forall X1.(m1\_subset\_1 X1 k2\_arytm\_2)\Rightarrow(\forall X2.(m1\_subset\_1 X2 k2\_arytm\_2)\Rightarrow((X0 = k7\_arytm\_2 X1 X2)\Rightarrow(r1\_arytm\_2 X2 X0))))$$