

# l24\_arytm\_2 (TMdwVSqP- kVAE4TFwA7huYNJdK9LR83dtCSo)

October 27, 2020

Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_arytm\_3 : \iota$  be given. Let  $k2\_arytm\_2 : \iota$  be given. Let  $r1\_arytm\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r3\_arytm\_3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\neg v1\_xboole\_0 k5\_arytm\_3 \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. (m1\_subset\_1 X0 k2\_arytm\_2) \Rightarrow (\forall X1. (m1\_subset\_1 \\ X1 k2\_arytm\_2) \Rightarrow (((X0 \in k5\_arytm\_3) \wedge (X1 \in k5\_arytm\_3)) \Rightarrow ((r1\_arytm\_2 \\ X0 X1) \Leftrightarrow (\exists X2. (m1\_subset\_1 X2 k5\_arytm\_3) \wedge (\exists X3. ( \\ m1\_subset\_1 X3 k5\_arytm\_3) \wedge ((X0 = X2) \wedge ((X1 = X3) \wedge (r3\_arytm\_3 X2 \\ X3)))))) \wedge (((X0 \in k5\_arytm\_3) \Rightarrow ((X1 \in k5\_arytm\_3) \vee ((r1\_arytm\_2 \\ X0 X1) \Leftrightarrow (X0 \in X1)))) \wedge (((X1 \in k5\_arytm\_3) \Rightarrow ((X0 \in k5\_arytm\_3) \vee ((r1\_arytm\_2 \\ X0 X1) \Leftrightarrow (\neg X1 \in X0)))) \wedge (\neg(\neg(X0 \in k5\_arytm\_3) \wedge (X1 \in k5\_arytm\_3)) \wedge \\ ((\neg(X0 \in k5\_arytm\_3) \wedge (\neg X1 \in k5\_arytm\_3)) \wedge (\neg(\neg X0 \in k5\_arytm\_3) \wedge \\ (X1 \in k5\_arytm\_3)) \wedge (\neg(r1\_arytm\_2 X0 X1) \Leftrightarrow (r1\_tarski X0 X1))))))))) \quad (3) \end{aligned}$$

**Theorem 1**

$$\begin{aligned} \forall X0. (m1\_subset\_1 X0 k5\_arytm\_3) \Rightarrow (\forall X1. (m1\_subset\_1 \\ X1 k5\_arytm\_3) \Rightarrow (\forall X2. (m1\_subset\_1 X2 k2\_arytm\_2) \Rightarrow (\forall X3. \\ (m1\_subset\_1 X3 k2\_arytm\_2) \Rightarrow (((X2 = X0) \wedge (X3 = X1)) \Rightarrow ((r1\_arytm\_2 \\ X2 X3) \Leftrightarrow (r3\_arytm\_3 X0 X1)))))) \end{aligned}$$