

# l49\_mod\_2 (TMWGH- PKQ7E9xYZ8tz1cjerbGEnzYxbwVJdP)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k11\_mod\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_mod\_2 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  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.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \neg v1\_xboole\_0 (k1\_enumset1 X0 X1 X2) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 X0 (k1\_enumset1 k6\_numbers np\_1 np\_2)) \wedge (m1\_subset\_1 X1 (k1\_enumset1 k6\_numbers np\_1 np\_2))) \Rightarrow (m1\_subset\_1 (k11\_mod\_2 X0 X1) (k1\_enumset1 k6\_numbers np\_1 np\_2)) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. (X3 = k1\_enumset1 X0 X1 X2) \Leftrightarrow (\forall X4. (X4 \in X3) \Leftrightarrow (\neg (X4 \neq X0) \wedge ((X4 \neq X1) \wedge (X4 \neq X2)))) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_subset\_1 X0 (k1\_enumset1 k6\_numbers np\_1 np\_2)) \Rightarrow \\ & (\forall X1. (m1\_subset\_1 X1 (k1\_enumset1 k6\_numbers np\_1 np\_2)) \Rightarrow \\ & (((X0 = k6\_numbers) \Rightarrow (k11\_mod\_2 X0 X1 = X1)) \wedge (((X1 = k6\_numbers) \Rightarrow \\ & (k11\_mod\_2 X0 X1 = X0)) \wedge (((X0 = np\_1) \wedge (X1 = np\_1)) \Rightarrow (k11\_mod\_2 \\ & X0 X1 = np\_2)) \wedge (((X0 = np\_1) \wedge (X1 = np\_2)) \Rightarrow (k11\_mod\_2 X0 X1 = k6\_numbers)) \wedge \\ & (((X0 = np\_2) \wedge (X1 = np\_1)) \Rightarrow (k11\_mod\_2 X0 X1 = k6\_numbers)) \wedge \\ & ((X0 = np\_2) \wedge (X1 = np\_2)) \Rightarrow (k11\_mod\_2 X0 X1 = np\_1)))))) \quad (6) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (k1\_enumset1 k6\_numbers np\_1 np\_2)) \Rightarrow \\ & (((X0 = k6\_numbers) \Rightarrow (k10\_mod\_2 X0 = k6\_numbers)) \wedge (((X0 = np\_1) \Rightarrow \\ & (k10\_mod\_2 X0 = np\_2)) \wedge ((X0 = np\_2) \Rightarrow (k10\_mod\_2 X0 = np\_1)))) \end{aligned} \quad (7)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (k1\_enumset1 k6\_numbers np\_1 np\_2)) \Rightarrow \\ & (\forall X1.(m1\_subset\_1 X1 (k1\_enumset1 k6\_numbers np\_1 np\_2)) \Rightarrow \\ & (\forall X2.(m1\_subset\_1 X2 (k1\_enumset1 k6\_numbers np\_1 np\_2)) \Rightarrow \\ & (\forall X3.(m1\_subset\_1 X3 (k1\_enumset1 k6\_numbers np\_1 np\_2)) \Rightarrow \\ & ((X3 = k6\_numbers) \Rightarrow ((k11\_mod\_2 X0 (k10\_mod\_2 X0) = X3) \wedge ((k11\_mod\_2 \\ & X0 X3 = X0) \wedge (k11\_mod\_2 (k11\_mod\_2 X0 X1) X2 = k11\_mod\_2 X0 (k11\_mod\_2 \\ & X1 X2)))))))))) \end{aligned}$$