

# t15\_gate\_1 (TMN- sxux2jfyKWDoFkUmNEMifr2iWYxRkdo6)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k9\_gate\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. (\neg v1\_xboole\_0 X0) \Rightarrow (\neg v1\_xboole\_0 (k9\_gate\_1 X1 X2 X0)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (\neg v1\_xboole\_0 X0) \Rightarrow (\neg v1\_xboole\_0 (k9\_gate\_1 X1 X0 X2)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (\neg v1\_xboole\_0 X0) \Rightarrow (\neg v1\_xboole\_0 (k9\_gate\_1 X0 X1 X2)) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((v1\_xboole\_0 X0) \wedge ((v1\_xboole\_0 X1) \wedge (v1\_xboole\_0 X2))) \Rightarrow (v1\_xboole\_0 (k9\_gate\_1 X0 X1 X2)) \quad (4)$$

**Theorem 1**

$$\forall X0. \forall X1. \forall X2. (\neg(\neg v1\_xboole\_0 (k9\_gate\_1 X0 X1 X2)) \wedge ((v1\_xboole\_0 X0) \wedge ((v1\_xboole\_0 X1) \wedge (v1\_xboole\_0 X2)))) \wedge (\neg(\neg(v1\_xboole\_0 X0) \wedge ((v1\_xboole\_0 X1) \wedge (v1\_xboole\_0 X2)))) \wedge (v1\_xboole\_0 (k9\_gate\_1 X0 X1 X2)))$$