

# t8\_neckla\_3 (TMYNG- WDeUiBthffz8XcU2M8nGW2LCAzhGDP)

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Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $k1\_neckla\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_neckla\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_orders\_2 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $g1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. k2\_xboole\_0 (k2\_xboole\_0 X0 X1) X2 = k2\_xboole\_0 X0 (k2\_xboole\_0 X1 X2) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. ((l1\_orders\_2 X0) \wedge (l1\_orders\_2 X1)) \Rightarrow (v1\_orders\_2 (k2\_neckla\_2 X0 X1)) \wedge (l1\_orders\_2 (k2\_neckla\_2 X0 X1)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((l1\_orders\_2 X0) \wedge (l1\_orders\_2 X1)) \Rightarrow (v1\_orders\_2 (k1\_neckla\_2 X0 X1)) \wedge (l1\_orders\_2 (k1\_neckla\_2 X0 X1)) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. (l1\_orders\_2 X0) \Rightarrow (\forall X1. (l1\_orders\_2 X1) \Rightarrow (\forall X2. \\ ((v1\_orders\_2 X2) \wedge (l1\_orders\_2 X2)) \Rightarrow ((X2 = k2\_neckla\_2 X0 X1) \Leftrightarrow \\ ((u1\_struct\_0 X2 = k2\_xboole\_0 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge \\ (u1\_orders\_2 X2 = k2\_xboole\_0 (k2\_xboole\_0 (k2\_xboole\_0 (u1\_orders\_2 X0) (u1\_orders\_2 X1)) (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1))) (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X0))))))) \quad (4) \end{aligned}$$

Assume the following.

$$\begin{aligned} \forall X0. (l1\_orders\_2 X0) \Rightarrow (\forall X1. (l1\_orders\_2 X1) \Rightarrow (\forall X2. \\ ((v1\_orders\_2 X2) \wedge (l1\_orders\_2 X2)) \Rightarrow ((X2 = k1\_neckla\_2 X0 X1) \Leftrightarrow \\ ((u1\_struct\_0 X2 = k2\_xboole\_0 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge \\ (u1\_orders\_2 X2 = k2\_xboole\_0 (u1\_orders\_2 X0) (u1\_orders\_2 X1)))))) \quad (5) \end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0 X0 X1 = k2\_xboole\_0 X1 X0 \quad (6)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow ((v1\_orders\_2 X0) \Rightarrow (X0 = g1\_orders\_2 (u1\_struct\_0 X0) (u1\_orders\_2 X0))) \quad (7)$$

**Theorem 1**

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow (\forall X1.(l1\_orders\_2 X1) \Rightarrow ((k1\_neckla\_2 X0 X1 = k1\_neckla\_2 X1 X0) \wedge (k2\_neckla\_2 X0 X1 = k2\_neckla\_2 X1 X0)))$$