

# t40\_heyting3 (TMJUZ- Abprw5dFAMruxvBXj2T6BnWZJ9wgpE)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_heyting3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_heyting3 : \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v5\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v2\_yellow\_0 : \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $r1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_yellow\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_heyting3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v3\_lattices : \iota \Rightarrow o$  be given. Let  $k5\_substlat : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v11\_lattices : \iota \Rightarrow o$  be given. Let  $v15\_lattices : \iota \Rightarrow o$  be given. Let  $v10\_lattices : \iota \Rightarrow o$  be given. Let  $v3\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v4\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v14\_lattices : \iota \Rightarrow o$  be given. Let  $l3\_lattices : \iota \Rightarrow o$  be given. Let  $v1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $k3\_lattice3 : \iota \Rightarrow \iota$  be given. Let  $v1\_lattice3 : \iota \Rightarrow o$  be given. Let  $v2\_lattice3 : \iota \Rightarrow o$  be given. Let  $v13\_lattices : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (1)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (v5\_orders\_2 X0) \wedge ((v2\_yellow\_0 X0) \wedge (l1\_orders\_2 X0))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow ((r1\_orders\_2 X0 (k4\_yellow\_0 X0) X1) \Rightarrow (X1 = k4\_yellow\_0 X0))) \quad (2)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 X0 k5\_numbers) \Rightarrow (k4\_yellow\_0 (k1\_heyting3 k5\_numbers (k6\_domain\_1 k5\_numbers X0)) = k1\_tarski k1\_xboole\_0) \quad (3)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 X0 k5\_numbers) \Rightarrow (k4\_heyting3 np\_1 X0 \neq k1\_tarski k1\_xboole\_0) \quad (4)$$

Assume the following.

$$\begin{aligned} & ((v2\_xreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$\neg v1\_xboole\_0 \ np\_1 \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v3\_lattices \ (k5\_substlat \ X0 \ X1)) \wedge ((v11\_lattices \\ & (k5\_substlat \ X0 \ X1)) \wedge (v15\_lattices \ (k5\_substlat \ X0 \ X1))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v3\_lattices \ (k5\_substlat \ X0 \ X1)) \wedge (v10\_lattices \\ & (k5\_substlat \ X0 \ X1)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v3\_orders\_2 \ (k1\_heyting3 \ X0 \ X1)) \wedge ((v4\_orders\_2 \\ & (k1\_heyting3 \ X0 \ X1)) \wedge (v5\_orders\_2 \ (k1\_heyting3 \ X0 \ X1))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 \ X0) \wedge ((v10\_lattices \ X0) \wedge ((v14\_lattices \\ & X0) \wedge (l3\_lattices \ X0)))) \Rightarrow ((v1\_orders\_2 \ (k3\_lattice3 \ X0)) \wedge (( \\ & v3\_orders\_2 \ (k3\_lattice3 \ X0)) \wedge ((v4\_orders\_2 \ (k3\_lattice3 \ X0)) \wedge \\ & ((v5\_orders\_2 \ (k3\_lattice3 \ X0)) \wedge (v2\_yellow\_0 \ (k3\_lattice3 \ X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (\neg v2\_struct\_0 \ (k5\_substlat \ X0 \ X1)) \wedge (v3\_lattices \\ & (k5\_substlat \ X0 \ X1)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v1\_lattice3 \ (k1\_heyting3 \ X0 \ X1)) \wedge (v2\_lattice3 \\ & (k1\_heyting3 \ X0 \ X1)) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v3\_lattices \ (k5\_substlat \ X0 \ X1)) \wedge (l3\_lattices \\ & (k5\_substlat \ X0 \ X1)) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_subset\_1 \ X0 \ k5\_numbers) \Rightarrow (m1\_subset\_1 \ (k5\_heyting3 \\ & X0) \ (k1\_zfmisc\_1 \ (u1\_struct\_0 \ (k1\_heyting3 \ k5\_numbers \ (k6\_domain\_1 \\ & k5\_numbers \ X0)))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.l1\_orders\_2 (k1\_heyting3 X0 X1) \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_orders\_2 X0) \Rightarrow (\forall X1.\forall X2.(m1\_subset\_1 \\ X2 (u1\_struct\_0 X0)) \Rightarrow ((r1\_lattice3 X0 X1 X2) \Leftrightarrow (\forall X3.(m1\_subset\_1 \\ X3 (u1\_struct\_0 X0)) \Rightarrow ((X3 \in X1) \Rightarrow (r1\_orders\_2 X0 X2 X3)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 (k1\_zfmisc\_1 (u1\_struct\_0 (k1\_heyting3 k5\_numbers (k6\_domain\_1 \\ k5\_numbers X0)))) \Rightarrow ((X1 = k5\_heyting3 X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow \\ (\exists X3.((\neg v1\_xboole\_0 X3) \wedge (m1\_subset\_1 X3 k5\_numbers)) \wedge \\ (X2 = k4\_heyting3 X3 X0)))))) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.k1\_heyting3 X0 X1 = k3\_lattice3 (k5\_substlat X0 X1) \quad (18)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3\_lattices X0) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge (v15\_lattices \\ X0)) \Rightarrow ((\neg v2\_struct\_0 X0) \wedge ((v13\_lattices X0) \wedge (v14\_lattices X0)))) \end{aligned} \quad (19)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow ((v2\_lattice3 X0) \Rightarrow (\neg v2\_struct\_0 X0)) \quad (20)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 (u1\_struct\_0 (k1\_heyting3 k5\_numbers (k6\_domain\_1 k5\_numbers \\ X0)))) \Rightarrow (\neg (r1\_lattice3 (k1\_heyting3 k5\_numbers (k6\_domain\_1 \\ k5\_numbers X0)) (k5\_heyting3 X0) X1) \wedge (X1 = k1\_tarski k1\_xboole\_0))) \end{aligned}$$