

## t12\_heyting2

(TMd9eyqNWoKtQXgxCekySQuWYfLwG7eQMyu)

October 27, 2020

Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_finsub\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_substlat : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_substlat : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_substlat : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_heyting2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_lattices : \iota \Rightarrow \iota$  be given. Let  $k5\_substlat : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k5\_finsub\_1 \\ & (k4\_partfun1 X0 X1))) \Rightarrow ((X2 = k1\_xboole\_0) \Rightarrow (k3\_substlat X0 X1 X2 = \\ & k1\_xboole\_0)) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v1\_finset\_1 X1) \Rightarrow (\forall X2. (m2\_subset\_1 \\ & X2 (k5\_finsub\_1 (k4\_partfun1 X0 X1)) (k1\_substlat X0 X1)) \Rightarrow (k4\_substlat \\ & X0 X1 X2 (k2\_heyting2 X0 X1 X2) = k1\_xboole\_0)) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. k5\_lattices (k5\_substlat X0 X1) = k1\_xboole\_0 \tag{4}$$

Assume the following.

$$\forall X0. \exists X1. (m1\_subset\_1 X1 (k5\_finsub\_1 X0)) \wedge ((v1\_xboole\_0 X1) \wedge (v1\_finset\_1 X1)) \tag{5}$$

### Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. (v1\_finset\_1 X1) \Rightarrow (\forall X2. (m2\_subset\_1 \\ & X2 (k5\_finsub\_1 (k4\_partfun1 X0 X1)) (k1\_substlat X0 X1)) \Rightarrow (k3\_substlat \\ & X0 X1 (k4\_substlat X0 X1 X2 (k2\_heyting2 X0 X1 X2)) = k5\_lattices ( \\ & k5\_substlat X0 X1))) \end{aligned}$$