

## t80\_trees\_3

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v1\_trees\_1 : \iota \Rightarrow o$  be given. Let  $k6\_trees\_1 : \iota \Rightarrow \iota$  be given. Let  $k12\_trees\_3 : \iota \Rightarrow \iota$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $v5\_trees\_3 : \iota \Rightarrow o$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k11\_trees\_3 : \iota \Rightarrow \iota$  be given. Let  $k9\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k5\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finseq\_1 \\ & X0) \wedge (v5\_trees\_3 X0)))) \Rightarrow (\forall X1.((\neg v1\_xboole\_0 X1) \wedge ((v1\_finset\_1 \\ & X1) \wedge (v1\_trees\_1 X1))) \Rightarrow (((X1 \in k10\_xtuple\_0 X0) \wedge (\forall X2.( \\ & (\neg v1\_xboole\_0 X2) \wedge ((v1\_finset\_1 X2) \wedge (v1\_trees\_1 X2)))) \Rightarrow ((X2 \in \\ & k10\_xtuple\_0 X0) \Rightarrow (r1\_xxreal\_0 (k6\_trees\_1 X2) (k6\_trees\_1 X1)))))) \Rightarrow \\ & (k6\_trees\_1 (k11\_trees\_3 X0) = k2\_nat\_1 (k6\_trees\_1 X1) np\_1)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ & X1))) \Rightarrow ((X1 = k9\_finseq\_1 X0) \Leftrightarrow ((k4\_finseq\_1 X1 = k2\_finseq\_1 np\_1) \wedge \\ & (k10\_xtuple\_0 X1 = k1\_tarski X0))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow ( \\ & r1\_xxreal\_0 X0 X0) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. k9\_finseq\_1 X0 = k5\_finseq\_1 X0 \quad (4)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (5)$$

Assume the following.

$$\forall X0.v1\_finseq\_1 (k5\_finseq\_1 X0) \quad (6)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k5\_finseq\_1 X0)) \wedge (v1\_funct\_1 (k5\_finseq\_1 X0)) \quad (7)$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_trees\_1 X0))) \Rightarrow (v5\_trees\_3 (k5\_finseq\_1 X0)) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_trees\_1 X0))) \Rightarrow (m1\_subset\_1 (k6\_trees\_1 X0) k5\_numbers) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k1\_tarski X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (X2 = X0)) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0 X0) \wedge (v1\_trees\_1 X0)) \Rightarrow (k12\_trees\_3 X0 = k11\_trees\_3 (k9\_finseq\_1 X0)) \quad (11)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (12)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (v1\_xreal\_0 X0) \quad (13)$$

**Theorem 1**

$$\forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_trees\_1 X0))) \Rightarrow (k6\_trees\_1 (k12\_trees\_3 X0) = k2\_nat\_1 (k6\_trees\_1 X0) \quad np\_1)$$