

# t1\_trees\_9 (TMVKd- wizNV4pD6S3vkcUqGTJecUqGPTZnbwq)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v3\_trees\_2 : \iota \Rightarrow o$  be given. Let  $k5\_trees\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k7\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_trees\_1 : \iota \Rightarrow o$  be given. Let  $k4\_trees\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & ((k7\_finseq\_1 X0 k1\_xboole\_0 = X0) \wedge (k7\_finseq\_1 k1\_xboole\_0 X0 = X0)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0) \wedge (v1\_trees\_1 X0)) \Rightarrow (k4\_trees\_1 \\ & X0 (k6\_finseq\_1 k5\_numbers) = X0) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((m1\_finseq\_1 X1 X0) \wedge (m1\_finseq\_1 \\ & X2 X0)) \Rightarrow (k8\_finseq\_1 X0 X1 X2 = k7\_finseq\_1 X1 X2) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.v1\_xboole\_0 (k6\_finseq\_1 X0) \quad (6)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v3\_trees\_2 X0))) \Rightarrow ((\neg v1\_xboole\_0 (k9\_xtuple\_0 X0)) \wedge (v1\_trees\_1 (k9\_xtuple\_0 X0))) \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_finseq\_1 X1 X0) \Rightarrow ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1)) \quad (8)$$

Assume the following.

$$\forall X0. m2\_finseq\_1 (k6\_finseq\_1 X0) X0 \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0. ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v3\_trees\_2 X0))) \Rightarrow \\ (\forall X1. (m2\_finseq\_1 X1 k5\_numbers) \Rightarrow (\forall X2. ((v1\_relat\_1 \\ X2) \wedge ((v1\_funct\_1 X2) \wedge (v3\_trees\_2 X2)))) \Rightarrow ((X2 = k5\_trees\_2 X0 X1) \Leftrightarrow \\ ((k9\_xtuple\_0 X2 = k4\_trees\_1 (k9\_xtuple\_0 X0) X1) \wedge (\forall X3. \\ (m2\_finseq\_1 X3 k5\_numbers) \Rightarrow ((X3 \in k4\_trees\_1 (k9\_xtuple\_0 X0) \\ X1) \Rightarrow (k1\_funct\_1 X2 X3 = k1\_funct\_1 X0 (k8\_finseq\_1 k5\_numbers X1 \\ X3)))))))))) \quad (10) \end{aligned}$$

**Theorem 1**

$$\forall X0. ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v3\_trees\_2 X0))) \Rightarrow (k5\_trees\_2 X0 (k6\_finseq\_1 k5\_numbers) = X0)$$