

## t2\_trees\_2

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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  $r2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & \quad (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ & \quad X1))) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 X2) \wedge (v1\_finseq\_1 \\ & \quad X2)))) \Rightarrow (((r1\_tarski X0 X2) \wedge (r1\_tarski X1 X2)) \Rightarrow (r3\_xboole\_0 X0 \\ & \quad X1)))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. (r2\_xboole\_0 X0 X1) \Leftrightarrow ((r1\_tarski X0 X1) \wedge (X0 \neq X1)) \tag{2}$$

### Theorem 1

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & \quad (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ & \quad X1))) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 X2) \wedge (v1\_finseq\_1 \\ & \quad X2)))) \Rightarrow (((r2\_xboole\_0 X0 X2) \wedge (r1\_tarski X1 X2)) \Rightarrow (r3\_xboole\_0 \\ & \quad X0 X1)))) \end{aligned}$$