

t22\_goboard9 (TM-  
LKxH5Y1XaUkeMyX41hkSAuYTCMjySXZab)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v3\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_6 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k15\_euclid : \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $v1\_topreal1 : \iota \Rightarrow o$  be given. Let  $v2\_topreal1 : \iota \Rightarrow o$  be given. Let  $v1\_goboard5 : \iota \Rightarrow o$  be given. Let  $v2\_goboard5 : \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_goboard2 : \iota \Rightarrow \iota$  be given. Let  $k1\_goboard9 : \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_finseq\_5 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_5 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_finseq\_1 X1 X0) \Rightarrow (k4\_finseq\_5 X0 X1 = k3\_finseq\_5 X1) \quad (2)$$

Assume the following.

$$\forall X0. ((\neg v1\_xboole\_0 X0) \wedge ((v1\_finseq\_6 X0 (u1\_struct\_0 (k15\_euclid np\_2)))) \wedge ((v1\_topreal1 X0) \wedge ((v2\_topreal1 X0) \wedge (v1\_goboard5 X0) \wedge ((v2\_goboard5 X0) \wedge (m1\_finseq\_1 X0 (u1\_struct\_0 (k15\_euclid np\_2)))))))) \Rightarrow (k1\_goboard9 X0 = k3\_finseq\_5 X0) \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v1\_xboole\_0 X0) \wedge (m2\_finseq\_1 X0 (u1\_struct\_0 (k15\_euclid np\_2)))) \Rightarrow (\forall X1. ((\neg v1\_xboole\_0 X1) \wedge (m2\_finseq\_1 X1 (u1\_struct\_0 (k15\_euclid np\_2)))) \Rightarrow ((X1 = k4\_finseq\_5 (u1\_struct\_0 (k15\_euclid np\_2)) X0) \Rightarrow (k2\_goboard2 X1 = k2\_goboard2 X0))) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_finseq\_1 X1 X0) \Rightarrow (k4\_finseq\_5 X0 (k4\_finseq\_5 X0 X1) = X1) \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v1\_finseq\_6 X0 (u1\_struct\_0 \\
& (k15\_euclid np\_2))) \wedge ((v1\_topreal1 X0) \wedge ((v2\_topreal1 X0) \wedge ( \\
& (v1\_goboard5 X0) \wedge ((v2\_goboard5 X0) \wedge (m1\_finseq\_1 X0 (u1\_struct\_0 \\
& (k15\_euclid np\_2)))))))))) \Rightarrow ((\neg v1\_xboole\_0 (k1\_goboard9 X0)) \wedge \\
& ((v1\_finseq\_6 (k1\_goboard9 X0) (u1\_struct\_0 (k15\_euclid np\_2))) \wedge \\
& ((v1\_topreal1 (k1\_goboard9 X0)) \wedge ((v2\_topreal1 (k1\_goboard9 \\
& X0)) \wedge ((v1\_goboard5 (k1\_goboard9 X0)) \wedge ((v2\_goboard5 (k1\_goboard9 \\
& X0)) \wedge (m2\_finseq\_1 (k1\_goboard9 X0) (u1\_struct\_0 (k15\_euclid \\
& np\_2))))))))))
\end{aligned} \tag{6}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((\neg v3\_funct\_1 X0) \wedge ((v1\_finseq\_6 \\
& X0 (u1\_struct\_0 (k15\_euclid np\_2))) \wedge ((v1\_topreal1 X0) \wedge ((v2\_topreal1 \\
& X0) \wedge ((v1\_goboard5 X0) \wedge ((v2\_goboard5 X0) \wedge (m2\_finseq\_1 X0 (u1\_struct\_0 \\
& (k15\_euclid np\_2)))))))))) \Rightarrow (k2\_goboard2 (k1\_goboard9 X0) = \\
& k2\_goboard2 X0)
\end{aligned}$$