

# t19\_goboard1 (TMLXvNrpZRQfeMYtkHYijp- dUMh2Rwy8YEQ7)

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Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v3\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_matrix\_1 : \iota \Rightarrow o$  be given. Let  $v2\_goboard1 : \iota \Rightarrow o$  be given. Let  $v3\_goboard1 : \iota \Rightarrow o$  be given. Let  $v4\_goboard1 : \iota \Rightarrow o$  be given. Let  $v5\_goboard1 : \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_finseq\_2 : \iota \Rightarrow \iota$  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  $k1\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k9\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_goboard1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $v2\_membered : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (&(\neg(\neg r1\_xxreal\_0 \\ &X0 np\_1) \wedge (\forall X1.(m2\_subset\_1 X1 k1\_numbers k5\_numbers) \Rightarrow \\ &(\neg(X0 = k2\_nat\_1 X1 np\_1) \wedge (\neg r1\_xxreal\_0 X1 k6\_numbers)))) \wedge (\neg \\ &(\exists X1.(m2\_subset\_1 X1 k1\_numbers k5\_numbers) \wedge ((X0 = k2\_nat\_1 \\ &X1 np\_1) \wedge (\neg r1\_xxreal\_0 X1 k6\_numbers)))) \wedge (r1\_xxreal\_0 X0 np\_1))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow (( \\ X0 \in k2\_finseq\_1 X1) \Leftrightarrow ((r1\_xxreal\_0 np\_1 X0) \wedge (r1\_xxreal\_0 X0 X1)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow (( \\ \neg r1\_xxreal\_0 (k1\_nat\_1 X1 np\_1) X0) \Leftrightarrow (r1\_xxreal\_0 X0 X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\
& (m2\_subset\_1 X1 k1\_numbers k5\_numbers) \Rightarrow (\forall X2.(m2\_subset\_1 \\
& X2 k1\_numbers k5\_numbers) \Rightarrow (\forall X3.((\neg v3\_relat\_1 X3) \wedge ((v1\_matrix\_1 \\
& X3) \wedge ((v2\_goboard1 X3) \wedge ((v3\_goboard1 X3) \wedge ((v4\_goboard1 X3) \wedge \\
& ((v5\_goboard1 X3) \wedge (m2\_finseq\_1 X3 (k3\_finseq\_2 (u1\_struct\_0 \\
& (k15\_euclid np\_2)))))))))) \Rightarrow (((X0 \in k2\_finseq\_1 (k1\_matrix\_1 \\
& X3)) \wedge ((k1\_matrix\_1 X3 = k2\_nat\_1 X1 np\_1) \wedge (r1\_xxreal\_0 np\_1 \\
& X2))) \Rightarrow ((r1\_xxreal\_0 X1 k6\_numbers) \vee ((r1\_xxreal\_0 X0 X2) \vee ((k9\_matrix\_1 \\
& (u1\_struct\_0 (k15\_euclid np\_2)) (k3\_goboard1 X3 X0) X2 = k9\_matrix\_1 \\
& (u1\_struct\_0 (k15\_euclid np\_2)) X3 X2) \wedge ((X2 \in k2\_finseq\_1 (k1\_matrix\_1 \\
& (k3\_goboard1 X3 X0))) \wedge (X2 \in k2\_finseq\_1 (k1\_matrix\_1 X3))))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& ((v2\_xxreal\_0 np\_1) \wedge (m2\_subset\_1 np\_1 k1\_numbers k5\_numbers)) \wedge \\
& ((m1\_subset\_1 np\_1 k5\_numbers) \wedge (m1\_subset\_1 np\_1 k1\_numbers))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 \\
& X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \tag{7}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((m1\_subset\_1 X0 k5\_numbers) \wedge (v7\_ordinal1 \\
& X1)) \Rightarrow (k2\_nat\_1 X0 X1 = k2\_xcmplx\_0 X0 X1)
\end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v7\_ordinal1 X0) \wedge (m1\_subset\_1 X1 k5\_numbers)) \Rightarrow \\
& (k1\_nat\_1 X0 X1 = k2\_xcmplx\_0 X0 X1)
\end{aligned} \tag{10}$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1) \wedge (v3\_ordinal1 k4\_ordinal1) \tag{11}$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0)\Rightarrow((v1\_funct\_1 X1)\wedge((v1\_finseq\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers X0)))))) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 X1 X0)\Rightarrow((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_finseq\_1 X1))) \quad (14)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (15)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((v1\_finseq\_1 X0)\wedge(v1\_matrix\_1 X0))))\Rightarrow(m1\_subset\_1 (k1\_matrix\_1 X0) k5\_numbers) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0)\wedge(v1\_xxreal\_0 X1))\Rightarrow((r1\_xxreal\_0 X0 X1)\vee(r1\_xxreal\_0 X1 X0)) \quad (17)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1)\Rightarrow(v7\_ordinal1 X0) \quad (18)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers))\Rightarrow(v3\_membered X0) \quad (19)$$

Assume the following.

$$\forall X0.(v3\_membered X0)\Rightarrow(v2\_membered X0) \quad (20)$$

Assume the following.

$$\forall X0.(v2\_membered X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 X0)\Rightarrow(v1\_xxreal\_0 X1)) \quad (21)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers)\Rightarrow(\forall X1. \\ & (m2\_subset\_1 X1 k1\_numbers k5\_numbers)\Rightarrow(\forall X2.((\neg v3\_relat\_1 \\ & X2)\wedge((v1\_matrix\_1 X2)\wedge((v2\_goboard1 X2)\wedge((v3\_goboard1 X2)\wedge \\ & ((v4\_goboard1 X2)\wedge((v5\_goboard1 X2)\wedge(m2\_finseq\_1 X2 (k3\_finseq\_2 \\ & (u1\_struct\_0 (k15\_euclid np\_2))))))))))\Rightarrow(((k1\_matrix\_1 X2 = \\ & k2\_nat\_1 X0 np\_1)\wedge(X1 \in k2\_finseq\_1 X0))\Rightarrow((r1\_xxreal\_0 X0 k6\_numbers)\vee \\ & ((k9\_matrix\_1 (u1\_struct\_0 (k15\_euclid np\_2)) (k3\_goboard1 \\ & X2 (k1\_matrix\_1 X2)) X1 = k9\_matrix\_1 (u1\_struct\_0 (k15\_euclid \\ & np\_2)) X2 X1)\wedge(X1 \in k2\_finseq\_1 (k1\_matrix\_1 (k3\_goboard1 X2 ( \\ & k1\_matrix\_1 X2)))))))))) \end{aligned}$$