

# t30\_goboard1

(TMQj15aqoS1Kzs7FG7mBTHcbMRqKpLoXdzY)

October 27, 2020

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  $r1\_goboard1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k9\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k7\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v5\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $k2\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k18\_complex1 : \iota \Rightarrow \iota$  be given. Let  $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. (k4\_tarski X0 X1 \in k2\_zfmisc\_1 X2 X3) \Leftrightarrow ((X0 \in X2) \wedge (X1 \in X3)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & (\forall X1. ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1))) \Rightarrow ((k3\_finseq\_1 X0 = k3\_finseq\_1 X1) \Leftrightarrow (k1\_relset\_1 k5\_numbers \\ & X0 = k1\_relset\_1 k5\_numbers X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \text{ } np\_2) \wedge (m2\_subset\_1 \text{ } np\_2 \text{ } k1\_numbers \text{ } k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \text{ } np\_2 \text{ } k5\_numbers) \wedge (m1\_subset\_1 \text{ } np\_2 \text{ } k1\_numbers)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 \text{ } X0) \wedge ((\neg v1\_xboole\_0 \text{ } X1) \wedge \\ & (m1\_subset\_1 \text{ } X1 \text{ } (k1\_zfmisc\_1 \text{ } X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\ & X2 \text{ } X0 \text{ } X1) \Leftrightarrow (m1\_subset\_1 \text{ } X2 \text{ } X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 \text{ } X1 \text{ } X0) \Leftrightarrow (m1\_finseq\_1 \text{ } X1 \text{ } X0) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1\_xboole\_0 \text{ } X0) \wedge ((v1\_matrix\_1 \\ & X1) \wedge (m1\_finseq\_1 \text{ } X1 \text{ } (k3\_finseq\_2 \text{ } X0))) \wedge (v7\_ordinal1 \text{ } X2)) \Rightarrow ( \\ & k9\_matrix\_1 \text{ } X0 \text{ } X1 \text{ } X2 = k7\_matrix\_1 \text{ } X0 \text{ } X1 \text{ } X2) \end{aligned} \quad (6)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_relat\_1 \text{ } X0) \wedge ((v1\_funct\_1 \text{ } X0) \wedge (v1\_finseq\_1 \text{ } X0))) \Rightarrow \\ & (k4\_finseq\_1 \text{ } X0 = k9\_xtuple\_0 \text{ } X0) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 \text{ } X1) \wedge (v4\_relat\_1 \text{ } X1 \text{ } X0)) \Rightarrow ( \\ & k1\_relset\_1 \text{ } X0 \text{ } X1 = k9\_xtuple\_0 \text{ } X1) \end{aligned} \quad (9)$$

Assume the following.

$$(\neg v1\_xboole\_0 \text{ } k4\_ordinal1) \wedge (v3\_ordinal1 \text{ } k4\_ordinal1) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v7\_ordinal1 \text{ } X0) \Rightarrow ((\neg v2\_struct\_0 \text{ } (k15\_euclid \text{ } X0)) \wedge \\ & (v5\_rltopsp1 \text{ } (k15\_euclid \text{ } X0))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 \text{ } X0) \wedge (l1\_struct\_0 \text{ } X0)) \Rightarrow (\neg v1\_xboole\_0 \\ & (u1\_struct\_0 \text{ } X0)) \end{aligned} \quad (12)$$

Assume the following.

$$\neg v1\_xboole\_0 \text{ } k1\_numbers \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0)\Rightarrow((v1\_funct\_1 X1)\wedge((v1\_finseq\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers X0)))))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 X1 X0)\Rightarrow((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_finseq\_1 X1))) \quad (15)$$

Assume the following.

$$\forall X0.(l1\_rltopsp1 X0)\Rightarrow((l1\_rlvect\_1 X0)\wedge(l1\_pre\_topc X0)) \quad (16)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0)\Rightarrow(l1\_struct\_0 X0) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge(((v1\_matrix\_1 X1)\wedge(m1\_finseq\_1 X1 (k3\_finseq\_2 X0))\wedge(v7\_ordinal1 X2)))\Rightarrow(m2\_finseq\_1 (k7\_matrix\_1 X0 X1 X2) X0)) \quad (18)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (19)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow((v5\_rltopsp1 (k15\_euclid X0))\wedge(l1\_rltopsp1 (k15\_euclid X0))) \quad (20)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(m2\_finseq\_1 X1 X0)\Rightarrow(\forall X2.((v1\_matrix\_1 X2)\wedge(m2\_finseq\_1 X2 (k3\_finseq\_2 X0))\Rightarrow((r1\_goboard1 X0 X1 X2)\Leftrightarrow \\ & ((\forall X3.(m2\_subset\_1 X3 k1\_numbers k5\_numbers)\Rightarrow(\neg(X3 \in k4\_finseq\_1 X1)\wedge(\forall X4.(m2\_subset\_1 X4 k1\_numbers k5\_numbers)\Rightarrow(\forall X5. \\ & (m2\_subset\_1 X5 k1\_numbers k5\_numbers)\Rightarrow(\neg(k4\_tarski X4 X5 \in k2\_matrix\_1 X2)\wedge(k7\_partfun1 X0 X1 X3 = k3\_matrix\_1 X0 X2 X4 X5))))))\wedge(\forall X3. \\ & (m2\_subset\_1 X3 k1\_numbers k5\_numbers)\Rightarrow(((X3 \in k4\_finseq\_1 X1)\wedge(k2\_nat\_1 X3 np\_1 \in k4\_finseq\_1 X1))\Rightarrow(\forall X4.(m2\_subset\_1 X4 k1\_numbers k5\_numbers)\Rightarrow(\forall X5.(m2\_subset\_1 X5 k1\_numbers k5\_numbers)\Rightarrow(\forall X6.(m2\_subset\_1 X6 k1\_numbers k5\_numbers)\Rightarrow(\forall X7.(m2\_subset\_1 X7 k1\_numbers k5\_numbers)\Rightarrow(((k4\_tarski X4 X5 \in k2\_matrix\_1 X2)\wedge((k4\_tarski X6 X7 \in k2\_matrix\_1 X2)\wedge((k7\_partfun1 X0 X1 X3 = k3\_matrix\_1 X0 X2 X4 X5)\wedge(k7\_partfun1 X0 X1 (k2\_nat\_1 X3 np\_1) = k3\_matrix\_1 X0 X2 X6 X7))))\Rightarrow(k2\_xcmplx\_0 (k18\_complex1 (k6\_xcmplx\_0 X4 X6)) (k18\_complex1 (k6\_xcmplx\_0 X5 X7)) = np\_1)))))))))) \quad (21) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_matrix\_1 X1) \wedge \\ & (m2\_finseq\_1 X1 (k3\_finseq\_2 X0))) \Rightarrow (\forall X2.(v7\_ordinal1 \\ & X2) \Rightarrow (\forall X3.(m2\_finseq\_1 X3 X0) \Rightarrow ((X3 = k7\_matrix\_1 X0 X1 X2) \Leftrightarrow \\ & ((k3\_finseq\_1 X3 = k3\_finseq\_1 X1) \wedge (\forall X4.(v7\_ordinal1 X4) \Rightarrow \\ & ((X4 \in k4\_finseq\_1 X1) \Rightarrow (k1\_funct\_1 X3 X4 = k3\_matrix\_1 X0 X1 X4 X2))))))) \end{aligned} \quad (22)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finseq\_1 \\ & X0) \wedge (v1\_matrix\_1 X0)))) \Rightarrow (k2\_matrix\_1 X0 = k2\_zfmisc\_1 (k4\_finseq\_1 \\ & X0) (k2\_finseq\_1 (k1\_matrix\_1 X0))) \end{aligned} \quad (23)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(X1 = \\ & k10\_xtuple\_0 X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (\exists X3.(X3 \in k9\_xtuple\_0 \\ & X0) \wedge (X2 = k1\_funct\_1 X0 X3)))) \end{aligned} \quad (24)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (25)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & ((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 X0) \wedge \\ & (v1\_finseq\_1 X0)))) \end{aligned} \quad (26)$$

### Theorem 1

$$\begin{aligned} & \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\ & ((\neg v3\_relat\_1 X1) \wedge ((v1\_matrix\_1 X1) \wedge ((v2\_goboard1 X1) \wedge ((v3\_goboard1 \\ & X1) \wedge ((v4\_goboard1 X1) \wedge ((v5\_goboard1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 \\ & (u1\_struct\_0 (k15\_euclid np\_2)))))))))) \Rightarrow (\forall X2.(m2\_finseq\_1 \\ & X2 (u1\_struct\_0 (k15\_euclid np\_2))) \Rightarrow (\neg (r1\_goboard1 (u1\_struct\_0 \\ & (k15\_euclid np\_2)) X2 X1) \wedge ((X0 \in k4\_finseq\_1 X2) \wedge (\forall X3. \\ & (m2\_subset\_1 X3 k1\_numbers k5\_numbers) \Rightarrow (\neg (X3 \in k2\_finseq\_1 (k1\_matrix\_1 \\ & X1)) \wedge (k7\_partfun1 (u1\_struct\_0 (k15\_euclid np\_2)) X2 X0 \in k10\_xtuple\_0 \\ & (k9\_matrix\_1 (u1\_struct\_0 (k15\_euclid np\_2)) X1 X3))))))) \end{aligned}$$