

t49\_cgames\_1  
(TMbEy77BGvMed4ebff1aeEHbGa5dG9LyBWs)

October 27, 2020

Let  $v2\_cgames\_1 : \iota \Rightarrow o$  be given. Let  $v10\_cgames\_1 : \iota \Rightarrow o$  be given. Let  $k6\_cgames\_1 : \iota \Rightarrow \iota$  be given. Let  $v8\_cgames\_1 : \iota \Rightarrow o$  be given. Let  $k7\_cgames\_1 : \iota \Rightarrow \iota$  be given. Let  $v6\_cgames\_1 : \iota \Rightarrow o$  be given. Let  $v5\_cgames\_1 : \iota \Rightarrow o$  be given. Let  $v9\_cgames\_1 : \iota \Rightarrow o$  be given. Let  $v7\_cgames\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v2\_cgames\_1 X0) \Rightarrow (((v5\_cgames\_1 X0) \Rightarrow (\forall X1. \\ & (v2\_cgames\_1 X1) \Rightarrow (\neg(X1 \in k7\_cgames\_1 X0) \wedge (\neg v8\_cgames\_1 X1) \wedge \\ & (\neg v9\_cgames\_1 X1)))))) \wedge (((\forall X1.(v2\_cgames\_1 X1) \Rightarrow (\neg(X1 \in \\ & k7\_cgames\_1 X0) \wedge (\neg v8\_cgames\_1 X1) \wedge (\neg v9\_cgames\_1 X1)))))) \Rightarrow (v5\_cgames\_1 \\ & X0) \wedge (((v6\_cgames\_1 X0) \Rightarrow (\forall X1.(v2\_cgames\_1 X1) \Rightarrow (\neg(X1 \in \\ & k6\_cgames\_1 X0) \wedge (\neg v8\_cgames\_1 X1) \wedge (\neg v10\_cgames\_1 X1)))))) \wedge \\ & ((\forall X1.(v2\_cgames\_1 X1) \Rightarrow (\neg(X1 \in k6\_cgames\_1 X0) \wedge (\neg v8\_cgames\_1 \\ & X1) \wedge (\neg v10\_cgames\_1 X1)))) \Rightarrow (v6\_cgames\_1 X0)))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.(v2\_cgames\_1 X0) \Rightarrow (\neg(\neg v7\_cgames\_1 X0) \wedge ((\neg v9\_cgames\_1 X0) \wedge (\neg v10\_cgames\_1 X0) \wedge (\neg v8\_cgames\_1 X0))) \quad (2)$$

Assume the following.

$$\forall X0.((v2\_cgames\_1 X0) \wedge (v9\_cgames\_1 X0)) \Rightarrow ((v2\_cgames\_1 X0) \wedge ((v5\_cgames\_1 X0) \wedge (\neg v7\_cgames\_1 X0))) \quad (3)$$

Assume the following.

$$\forall X0.((v2\_cgames\_1 X0) \wedge (v10\_cgames\_1 X0)) \Rightarrow ((v2\_cgames\_1 X0) \wedge ((v6\_cgames\_1 X0) \wedge (\neg v7\_cgames\_1 X0))) \quad (4)$$

Assume the following.

$$\forall X0.((v2\_cgames\_1 X0) \wedge ((v5\_cgames\_1 X0) \wedge (v6\_cgames\_1 X0))) \Rightarrow ((v2\_cgames\_1 X0) \wedge (v7\_cgames\_1 X0)) \quad (5)$$

Assume the following.

$$\forall X0.((v2\_cgames\_1 X0) \wedge (v7\_cgames\_1 X0)) \Rightarrow ((v2\_cgames\_1 X0) \wedge ((v5\_cgames\_1 X0) \wedge (v6\_cgames\_1 X0))) \quad (6)$$

Assume the following.

$$\forall X0.((v2\_cgames\_1 X0) \wedge (v8\_cgames\_1 X0)) \Rightarrow ((v2\_cgames\_1 X0) \wedge ((\neg v5\_cgames\_1 X0) \wedge (\neg v6\_cgames\_1 X0))) \quad (7)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(v2\_cgames\_1 X0) \Rightarrow ((v10\_cgames\_1 X0) \Leftrightarrow ((\forall X1. \\ (v2\_cgames\_1 X1) \Rightarrow (\neg(X1 \in k6\_cgames\_1 X0) \wedge ((\neg v8\_cgames\_1 X1) \wedge \\ (\neg v10\_cgames\_1 X1)))) \wedge (\exists X1.(v2\_cgames\_1 X1) \wedge ((X1 \in k7\_cgames\_1 \\ X0) \wedge (v6\_cgames\_1 X1)))))) \end{aligned}$$