

t30_stacks_1

(TMVj2gV2oPsag8jYJcMQNQMUWPAAdRT1E4C8)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $v2_stacks_1 : \iota \Rightarrow o$ be given. Let $v3_stacks_1 : \iota \Rightarrow o$ be given. Let $v4_stacks_1 : \iota \Rightarrow o$ be given. Let $v5_stacks_1 : \iota \Rightarrow o$ be given. Let $v6_stacks_1 : \iota \Rightarrow o$ be given. Let $l1_stacks_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $m2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_finseq_2 : \iota \Rightarrow \iota$ be given. Let $k9_stacks_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_stacks_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_stacks_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_stacks_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_stacks_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k13_stacks_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k6_finseq_1 : \iota \Rightarrow \iota$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_finseq_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_rewrite1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k12_stacks_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_stacks_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_stacks_1 \\ & X0) \wedge ((v3_stacks_1 X0) \wedge ((v4_stacks_1 X0) \wedge ((v5_stacks_1 X0) \wedge \\ & ((v6_stacks_1 X0) \wedge (l1_stacks_1 X0)))))))) \Rightarrow (\forall X1. (m1_subset_1 \\ & X1 (u4_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 \\ & X0)) \Rightarrow (k9_stacks_1 X0 (k7_stacks_1 X0 X1 X2) = k1_stacks_1 (u1_struct_0 \\ & X0) (k12_finseq_1 (u1_struct_0 X0) X2) (k9_stacks_1 X0 X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_stacks_1 \\ & X0) \wedge ((v3_stacks_1 X0) \wedge ((v4_stacks_1 X0) \wedge ((v5_stacks_1 X0) \wedge \\ & ((v6_stacks_1 X0) \wedge (l1_stacks_1 X0)))))))) \Rightarrow (\forall X1. (m1_subset_1 \\ & X1 (u4_struct_0 X0)) \Rightarrow ((r1_stacks_1 X0 X1) \Rightarrow (k9_stacks_1 X0 X1 = \\ & k1_xboole_0))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_stacks_1 \\ X0) \wedge ((v3_stacks_1 X0) \wedge ((v4_stacks_1 X0) \wedge ((v5_stacks_1 X0) \wedge \\ ((v6_stacks_1 X0) \wedge (l1_stacks_1 X0)))))))) \Rightarrow (\forall X1.(m1_subset_1 \\ X1 (u4_struct_0 X0)) \Rightarrow (k13_stacks_1 X0 X1 \in k11_stacks_1 X0 X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0 : \iota \Rightarrow o. \forall X1. (\neg v1_xboole_0 X1) \Rightarrow (((X0 (k6_finseq_1 \\ X1)) \wedge (\forall X2.(m2_finseq_1 X2 X1) \Rightarrow (\forall X3.(m1_subset_1 \\ X3 X1) \Rightarrow ((X0 X2) \Rightarrow (X0 (k1_stacks_1 X1 (k12_finseq_1 X1 X3) X2)))))) \Rightarrow \\ (\forall X2.(m2_finseq_1 X2 X1) \Rightarrow (X0 X2))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (m1_finseq_2 X1 X0) \Rightarrow (\forall X2.(m2_finseq_2 \\ X2 X0 X1) \Rightarrow (m2_finseq_1 X2 X0)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 \\ X0) \wedge (l1_stacks_1 X0))) \wedge ((m1_subset_1 X1 (u4_struct_0 X0)) \wedge \\ (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (m1_subset_1 (k7_stacks_1 \\ X0 X1 X2) (u4_struct_0 X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0. m1_finseq_2 (k3_finseq_2 X0) X0 \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge \\ ((v2_stacks_1 X0) \wedge ((v3_stacks_1 X0) \wedge ((v4_stacks_1 X0) \wedge ((v5_stacks_1 \\ X0) \wedge ((v6_stacks_1 X0) \wedge (l1_stacks_1 X0)))))))) \wedge (m1_subset_1 \\ X1 (u4_struct_0 X0))) \Rightarrow (m1_subset_1 (k13_stacks_1 X0 X1) (u4_struct_0 \\ X0)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge \\ ((v2_stacks_1 X0) \wedge ((v3_stacks_1 X0) \wedge ((v4_stacks_1 X0) \wedge ((v5_stacks_1 \\ X0) \wedge ((v6_stacks_1 X0) \wedge (l1_stacks_1 X0)))))))) \wedge (m1_subset_1 \\ X1 (u4_struct_0 X0))) \Rightarrow (m1_subset_1 (k11_stacks_1 X0 X1) (k1_zfmisc_1 \\ (u4_struct_0 X0))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0. k6_finseq_1 X0 = k1_xboole_0 \quad (10)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_stacks_1 \\
& X0) \wedge ((v3_stacks_1 X0) \wedge ((v4_stacks_1 X0) \wedge ((v5_stacks_1 X0) \wedge \\
& ((v6_stacks_1 X0) \wedge (l1_stacks_1 X0)))))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 (u4_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u4_struct_0 \\
& X0)) \Rightarrow ((X2 = k13_stacks_1 X0 X1) \Leftrightarrow ((r1_stacks_1 X0 X2) \wedge (\exists X3. \\
& ((v5_relat_1 X3 (u4_struct_0 X0)) \wedge (m1_rewrite1 X3 (k12_stacks_1 \\
& X0)) \wedge ((k1_funct_1 X3 np_1 = X1) \wedge ((k1_funct_1 X3 (k3_finseq_1 \\
& X3) = X2) \wedge (\forall X4.(v7_ordinal1 X4) \Rightarrow ((r1_xxreal_0 np_1 X4) \Rightarrow \\
& ((r1_xxreal_0 (k3_finseq_1 X3) X4) \vee ((\neg r1_stacks_1 X0 (k7_partfun1 \\
& (u4_struct_0 X0) X3 X4) \wedge (k7_partfun1 (u4_struct_0 X0) X3 (k1_nat_1 \\
& X4 np_1) = k5_stacks_1 X0 (k7_partfun1 (u4_struct_0 X0) X3 X4))))))))))))) \\
& \hspace{15em} (11)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_stacks_1 \\
& X0) \wedge ((v3_stacks_1 X0) \wedge ((v4_stacks_1 X0) \wedge ((v5_stacks_1 X0) \wedge \\
& ((v6_stacks_1 X0) \wedge (l1_stacks_1 X0)))))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 (u4_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\
& (u4_struct_0 X0)) \Rightarrow ((X2 = k11_stacks_1 X0 X1) \Leftrightarrow ((X1 \in X2) \wedge ((\forall X3. \\
& (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\
& (u4_struct_0 X0)) \Rightarrow ((X4 \in X2) \Rightarrow ((k7_stacks_1 X0 X4 X3 \in X2) \wedge ((\neg r1_stacks_1 \\
& X0 X4) \Rightarrow (k5_stacks_1 X0 X4 \in X2)))))) \wedge (\forall X3.(m1_subset_1 \\
& X3 (k1_zfmisc_1 (u4_struct_0 X0)) \Rightarrow (((X1 \in X3) \wedge (\forall X4.(m1_subset_1 \\
& X4 (u1_struct_0 X0)) \Rightarrow (\forall X5.(m1_subset_1 X5 (u4_struct_0 \\
& X0)) \Rightarrow ((X5 \in X3) \Rightarrow ((k7_stacks_1 X0 X5 X4 \in X3) \wedge ((\neg r1_stacks_1 X0 X5) \Rightarrow \\
& (k5_stacks_1 X0 X5 \in X3)))))) \Rightarrow (r1_tarski X2 X3))))))))) \\
& \hspace{15em} (12)
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_stacks_1 \\
& X0) \wedge ((v3_stacks_1 X0) \wedge ((v4_stacks_1 X0) \wedge ((v5_stacks_1 X0) \wedge \\
& ((v6_stacks_1 X0) \wedge (l1_stacks_1 X0)))))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 (u4_struct_0 X0)) \Rightarrow (\forall X2.(m2_finseq_2 X2 (u1_struct_0 \\
& X0) (k3_finseq_2 (u1_struct_0 X0)) \Rightarrow (\exists X3.(m1_subset_1 \\
& X3 (u4_struct_0 X0) \wedge ((k9_stacks_1 X0 X3 = X2) \wedge (X3 \in k11_stacks_1 \\
& X0 X1))))))
\end{aligned}$$