

t31_stacks_1
(TMWjUbCUK29Ls8xvzx4kZuZkUN4uusc2h6D)

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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 $k11_stacks_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13_stacks_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_stacks_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_stacks_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k7_stacks_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_rewrite1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k12_stacks_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_stacks_1 \\ &X0) \wedge ((v3_stacks_1 X0) \wedge ((v4_stacks_1 X0) \wedge ((v5_stacks_1 X0) \wedge \\ &((v6_stacks_1 X0) \wedge (l1_stacks_1 X0)))))))) \Rightarrow (\forall X1. (m1_subset_1 \\ &X1 (u4_struct_0 X0)) \Rightarrow ((\neg r1_stacks_1 X0 X1) \Rightarrow (k13_stacks_1 X0 (\\ &k5_stacks_1 X0 X1) = k13_stacks_1 X0 X1))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_stacks_1 \\ &X0) \wedge ((v3_stacks_1 X0) \wedge ((v4_stacks_1 X0) \wedge ((v5_stacks_1 X0) \wedge \\ &((v6_stacks_1 X0) \wedge (l1_stacks_1 X0)))))))) \Rightarrow (\forall X1. (m1_subset_1 \\ &X1 (u4_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 \\ &X0)) \Rightarrow (k13_stacks_1 X0 (k7_stacks_1 X0 X1 X2) = k13_stacks_1 X0 X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_stacks_1 \\ &X0) \wedge ((v3_stacks_1 X0) \wedge ((v4_stacks_1 X0) \wedge ((v5_stacks_1 X0) \wedge \\ &((v6_stacks_1 X0) \wedge (l1_stacks_1 X0)))))))) \Rightarrow (\forall X1. (m1_subset_1 \\ &X1 (u4_struct_0 X0)) \Rightarrow (k11_stacks_1 X0 X1 = \text{ReplSep} (\text{toset} (\lambda X2 : \\ &\iota. m1_subset_1 X2 (u4_struct_0 X0))) (\lambda X2 : \iota. r1_rewrite1 \\ &(k12_stacks_1 X0) X1 X2) (\lambda X2 : \iota. X2))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0 : \iota \Rightarrow o. \forall X1. \forall X2. \forall X3. \forall X4. \\
& ((\neg v1_xboole_0 X4) \wedge ((m1_subset_1 X3 X4) \wedge ((m1_subset_1 X2 X4) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X4 X4)))))) \Rightarrow (((X0 X3) \wedge \\
& (r1_rewrite1 X1 X3 X2) \wedge (\forall X5. (m1_subset_1 X5 X4) \Rightarrow (\forall X6. \\
& (m1_subset_1 X6 X4) \Rightarrow (((r1_rewrite1 X1 X3 X5) \wedge ((k1_domain_1 X4 \\
& X4 X5 X6 \in X1) \wedge (X0 X5)) \Rightarrow (X0 X6)))))) \Rightarrow (X0 X2))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_stacks_1 \\
& X0) \wedge ((v3_stacks_1 X0) \wedge ((v4_stacks_1 X0) \wedge ((v5_stacks_1 X0) \wedge \\
& ((v6_stacks_1 X0) \wedge (l1_stacks_1 X0)))))) \Rightarrow (m1_subset_1 (k12_stacks_1 \\
& X0) (k1_zfmisc_1 (k2_zfmisc_1 (u4_struct_0 X0) (u4_struct_0 X0))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_stacks_1 \\
& X0) \wedge ((v3_stacks_1 X0) \wedge ((v4_stacks_1 X0) \wedge ((v5_stacks_1 X0) \wedge \\
& ((v6_stacks_1 X0) \wedge (l1_stacks_1 X0)))))) \Rightarrow (\forall X1. (m1_subset_1 \\
& X1 (k1_zfmisc_1 (k2_zfmisc_1 (u4_struct_0 X0) (u4_struct_0 X0)))) \Rightarrow \\
& ((X1 = k12_stacks_1 X0) \Leftrightarrow (\forall X2. (m1_subset_1 X2 (u4_struct_0 \\
& X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 (u4_struct_0 X0)) \Rightarrow ((k1_domain_1 \\
& (u4_struct_0 X0) (u4_struct_0 X0) X2 X3 \in X1) \Leftrightarrow (\neg(\neg(\neg r1_stacks_1 \\
& X0 X2) \wedge (X3 = k5_stacks_1 X0 X2)) \wedge (\forall X4. (m1_subset_1 X4 (u1_struct_0 \\
& X0)) \Rightarrow (X3 \neq k7_stacks_1 X0 X2 X4))))))
\end{aligned} \tag{6}$$

Theorem 1

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_stacks_1 \\
& X0) \wedge ((v3_stacks_1 X0) \wedge ((v4_stacks_1 X0) \wedge ((v5_stacks_1 X0) \wedge \\
& ((v6_stacks_1 X0) \wedge (l1_stacks_1 X0)))))) \Rightarrow (\forall X1. (m1_subset_1 \\
& X1 (u4_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u4_struct_0 \\
& X0)) \Rightarrow ((X1 \in k11_stacks_1 X0 X2) \Rightarrow (k13_stacks_1 X0 X1 = k13_stacks_1 \\
& X0 X2))))
\end{aligned}$$