

# l10\_csspace2 (TMVkd- Fxm7AvsiqKboeb4vCxJQcMAudDLuKy)

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Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k18\_csspace : \iota$  be given. Let  $k6\_csspace : \iota$  be given. Let  $v6\_clvect\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k11\_csspace : \iota$  be given. Let  $k7\_csspace : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_numbers : \iota$  be given. Let  $g1\_csspace : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $g1\_clvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k10\_csspace : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_csspace : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_csspace : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k17\_csspace : \iota$  be given. Let  $v1\_csspace : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v1\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v2\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v5\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $k1\_csspace : \iota$  be given. Let  $k4\_csspace : \iota$  be given. Let  $k5\_csspace : \iota$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l1\_csspace : \iota \Rightarrow o$  be given. Let  $l1\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_clvect\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_csspace : \iota \Rightarrow \iota$  be given. Assume the following.

$$(v6\_clvect\_1 \ k11\_csspace \ k7\_csspace) \wedge (\neg v1\_xboole\_0 \ k11\_csspace) \quad (1)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((m1\_subset\_1 \\
& X1 X0)\wedge(((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 X0) X0)\wedge \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) \\
& X0))))\wedge(((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 (k2\_zfmisc\_1 k2\_numbers \\
& X0) X0)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\
& k2\_numbers X0) X0))))\wedge((v1\_funct\_1 X4)\wedge((v1\_funct\_2 X4 (k2\_zfmisc\_1 \\
& X0 X0) k2\_numbers)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X0) k2\_numbers))))))\Rightarrow(\forall X5.\forall X6. \\
& \forall X7.\forall X8.\forall X9.(g1\_csspace X0 X1 X2 X3 X4 = g1\_csspace \\
& X5 X6 X7 X8 X9)\Rightarrow((X0 = X5)\wedge((X1 = X6)\wedge((X2 = X7)\wedge((X3 = X8)\wedge(X4 = X9))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1 X1 \\
& X0)\wedge(((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 X0) X0)\wedge \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) \\
& X0))))\wedge((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 (k2\_zfmisc\_1 k2\_numbers \\
& X0) X0)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\
& k2\_numbers X0) X0))))))\Rightarrow(\forall X4.\forall X5.\forall X6.\forall X7. \\
& (g1\_clvect\_1 X0 X1 X2 X3 = g1\_clvect\_1 X4 X5 X6 X7)\Rightarrow((X0 = X4)\wedge((X1 = \\
& X5)\wedge((X2 = X6)\wedge(X3 = X7))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& (\neg v2\_struct\_0 (g1\_csspace k11\_csspace (k10\_csspace k7\_csspace \\
& k11\_csspace) (k8\_csspace k7\_csspace k11\_csspace) (k9\_csspace \\
& k7\_csspace k11\_csspace) k17\_csspace))\wedge(v1\_csspace (g1\_csspace \\
& k11\_csspace (k10\_csspace k7\_csspace k11\_csspace) (k8\_csspace \\
& k7\_csspace k11\_csspace) (k9\_csspace k7\_csspace k11\_csspace) \\
& k17\_csspace))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& (\neg v2\_struct\_0 k7\_csspace)\wedge((v13\_algstr\_0 k7\_csspace)\wedge((v2\_rlvect\_1 \\
& k7\_csspace)\wedge((v3\_rlvect\_1 k7\_csspace)\wedge((v4\_rlvect\_1 k7\_csspace)\wedge \\
& ((v1\_clvect\_1 k7\_csspace)\wedge((v2\_clvect\_1 k7\_csspace)\wedge((v3\_clvect\_1 \\
& k7\_csspace)\wedge((v4\_clvect\_1 k7\_csspace)\wedge(v5\_clvect\_1 k7\_csspace)))))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& (v2\_rlvect\_1 (g1\_clvect\_1 k1\_csspace k6\_csspace k4\_csspace k5\_csspace))\wedge \\
& (v1\_clvect\_1 (g1\_clvect\_1 k1\_csspace k6\_csspace k4\_csspace k5\_csspace))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0)\Rightarrow((l2\_struct\_0 X0)\wedge(l1\_algstr\_0 X0)) \tag{7}$$

Assume the following.

$$\forall X0.(l1\_csspace\ X0)\Rightarrow(l1\_clvect\_1\ X0) \quad (8)$$

Assume the following.

$$\forall X0.(l1\_clvect\_1\ X0)\Rightarrow(l2\_algstr\_0\ X0) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge \\ & ((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v2\_clvect\_1 \\ & X0)\wedge((v3\_clvect\_1\ X0)\wedge((v4\_clvect\_1\ X0)\wedge((v5\_clvect\_1\ X0)\wedge \\ & (l1\_clvect\_1\ X0))))))))))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0 \\ & X0))))\Rightarrow((v1\_funct\_1\ (k9\_csspace\ X0\ X1))\wedge((v1\_funct\_2\ (k9\_csspace \\ & X0\ X1)\ (k2\_zfmisc\_1\ k2\_numbers\ X1)\ X1)\wedge(m1\_subset\_1\ (k9\_csspace \\ & X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ k2\_numbers\ X1)\ X1)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge \\ & ((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v2\_clvect\_1 \\ & X0)\wedge((v3\_clvect\_1\ X0)\wedge((v4\_clvect\_1\ X0)\wedge((v5\_clvect\_1\ X0)\wedge \\ & (l1\_clvect\_1\ X0))))))))))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0 \\ & X0))))\Rightarrow((v1\_funct\_1\ (k8\_csspace\ X0\ X1))\wedge((v1\_funct\_2\ (k8\_csspace \\ & X0\ X1)\ (k2\_zfmisc\_1\ X1\ X1)\ X1)\wedge(m1\_subset\_1\ (k8\_csspace\ X0\ X1)\ ( \\ & k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ X1)\ X1)))))) \end{aligned} \quad (11)$$

Assume the following.

$$(\neg v2\_struct\_0\ k7\_csspace)\wedge((v1\_clvect\_1\ k7\_csspace)\wedge(l1\_clvect\_1\ k7\_csspace)) \quad (12)$$

Assume the following.

$$m1\_subset\_1\ k6\_csspace\ k1\_csspace \quad (13)$$

Assume the following.

$$\begin{aligned} & (v1\_funct\_1\ k5\_csspace)\wedge((v1\_funct\_2\ k5\_csspace\ (k2\_zfmisc\_1 \\ & k2\_numbers\ k1\_csspace)\ k1\_csspace)\wedge(m1\_subset\_1\ k5\_csspace \\ & (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ k2\_numbers\ k1\_csspace) \\ & k1\_csspace)))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & (v1\_funct\_1\ k4\_csspace)\wedge((v1\_funct\_2\ k4\_csspace\ (k2\_zfmisc\_1 \\ & k1\_csspace\ k1\_csspace)\ k1\_csspace)\wedge(m1\_subset\_1\ k4\_csspace \\ & (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_csspace\ k1\_csspace) \\ & k1\_csspace)))) \end{aligned} \quad (15)$$

Assume the following.

$$(\neg v2\_struct\_0 \ k18\_csspace) \wedge (l1\_csspace \ k18\_csspace) \quad (16)$$

Assume the following.

$$\begin{aligned} & (v1\_funct\_1 \ k17\_csspace) \wedge ((v1\_funct\_2 \ k17\_csspace \ (k2\_zfmisc\_1 \\ & \ k11\_csspace \ k11\_csspace) \ k2\_numbers) \wedge (m1\_subset\_1 \ k17\_csspace \\ & \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k11\_csspace \ k11\_csspace) \\ & \ k2\_numbers)))) \end{aligned} \quad (17)$$

Assume the following.

$$m1\_subset\_1 \ k11\_csspace \ (k1\_zfmisc\_1 \ (u1\_struct\_0 \ k7\_csspace)) \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 \ X0) \wedge ((v13\_algstr\_0 \ X0) \wedge \\ & ((v2\_rlvect\_1 \ X0) \wedge ((v3\_rlvect\_1 \ X0) \wedge ((v4\_rlvect\_1 \ X0) \wedge ((v2\_clvect\_1 \\ & \ X0) \wedge ((v3\_clvect\_1 \ X0) \wedge ((v4\_clvect\_1 \ X0) \wedge ((v5\_clvect\_1 \ X0) \wedge \\ & (l1\_clvect\_1 \ X0)))))))))) \wedge (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ (u1\_struct\_0 \\ & \ X0)))) \Rightarrow (m1\_subset\_1 \ (k10\_csspace \ X0 \ X1) \ X1) \end{aligned} \quad (19)$$

Assume the following.

$$k7\_csspace = g1\_clvect\_1 \ k1\_csspace \ k6\_csspace \ k4\_csspace \ k5\_csspace \quad (20)$$

Assume the following.

$$\forall X0. (l2\_struct\_0 \ X0) \Rightarrow (k4\_struct\_0 \ X0 = u2\_struct\_0 \ X0) \quad (21)$$

Assume the following.

$$\begin{aligned} & k18\_csspace = g1\_csspace \ k11\_csspace \ (k10\_csspace \ k7\_csspace \\ & \ k11\_csspace) \ (k8\_csspace \ k7\_csspace \ k11\_csspace) \ (k9\_csspace \\ & \ k7\_csspace \ k11\_csspace) \ k17\_csspace \end{aligned} \quad (22)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 \ X0) \wedge ((v13\_algstr\_0 \ X0) \wedge ((v2\_rlvect\_1 \\ & \ X0) \wedge ((v3\_rlvect\_1 \ X0) \wedge ((v4\_rlvect\_1 \ X0) \wedge ((v2\_clvect\_1 \ X0) \wedge \\ & ((v3\_clvect\_1 \ X0) \wedge ((v4\_clvect\_1 \ X0) \wedge ((v5\_clvect\_1 \ X0) \wedge (l1\_clvect\_1 \\ & \ X0)))))))))) \Rightarrow (\forall X1. (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ (u1\_struct\_0 \\ & \ X0))) \Rightarrow ((v6\_clvect\_1 \ X1 \ X0) \Rightarrow ((v1\_xboole\_0 \ X1) \vee (k10\_csspace \ X0 \\ & \ X1 = k4\_struct\_0 \ X0)))) \end{aligned} \quad (23)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1\_csspace \ X0) \Rightarrow ((v1\_csspace \ X0) \Rightarrow (X0 = g1\_csspace \\ & \ (u1\_struct\_0 \ X0) \ (u2\_struct\_0 \ X0) \ (u1\_algstr\_0 \ X0) \ (u1\_clvect\_1 \\ & \ X0) \ (u1\_csspace \ X0))) \end{aligned} \quad (24)$$

Assume the following.

$$\forall X0. (l1\_clvect\_1 X0) \Rightarrow ((v1\_clvect\_1 X0) \Rightarrow (X0 = g1\_clvect\_1 (u1\_struct\_0 X0) (u2\_struct\_0 X0) (u1\_algstr\_0 X0) (u1\_clvect\_1 X0))) \quad (25)$$

**Theorem 1**  $k4\_struct\_0 k18\_csspace = k6\_csspace$ .