

t12\_ndiff\_2 (TMZb-  
DgknUjD62AJwrUPEMGvzbFwpXGHQ4po)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v7\_struct\_0 : \iota \Rightarrow o$  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  $v5\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v6\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v7\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v8\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $v4\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $v2\_normsp\_1 : \iota \Rightarrow o$  be given. Let  $l1\_normsp\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v2\_ndiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v13\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_lopban\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_lopban\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_vfunct\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be

given. Let  $k2\_vfunct\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((\neg v7\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\
& ((v5\_rlvect\_1 X0) \wedge ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 \\
& X0) \wedge ((v3\_normsp\_0 X0) \wedge ((v4\_normsp\_0 X0) \wedge ((v2\_normsp\_1 X0) \wedge \\
& (l1\_normsp\_1 X0)))))))))) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge \\
& ((\neg v7\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge (( \\
& v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v5\_rlvect\_1 X1) \wedge ((v6\_rlvect\_1 \\
& X1) \wedge ((v7\_rlvect\_1 X1) \wedge ((v8\_rlvect\_1 X1) \wedge ((v3\_normsp\_0 X1) \wedge \\
& (v4\_normsp\_0 X1) \wedge ((v2\_normsp\_1 X1) \wedge (l1\_normsp\_1 X1)))))))))) \Rightarrow \\
& (\forall X2. ((\neg v2\_struct\_0 X2) \wedge ((\neg v7\_struct\_0 X2) \wedge ((v13\_algstr\_0 \\
& X2) \wedge ((v2\_rlvect\_1 X2) \wedge ((v3\_rlvect\_1 X2) \wedge ((v4\_rlvect\_1 X2) \wedge \\
& ((v5\_rlvect\_1 X2) \wedge ((v6\_rlvect\_1 X2) \wedge ((v7\_rlvect\_1 X2) \wedge ((v8\_rlvect\_1 \\
& X2) \wedge ((v3\_normsp\_0 X2) \wedge ((v4\_normsp\_0 X2) \wedge ((v2\_normsp\_1 X2) \wedge \\
& (l1\_normsp\_1 X2)))))))))) \Rightarrow (\forall X3. ((v1\_funct\_1 X3) \wedge \\
& ((v2\_ndiff\_1 X3 X0 X1) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow (\forall X4. ((v1\_funct\_1 \\
& X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 X1) (u1\_struct\_0 X2)) \wedge ((v13\_vectsp\_1 \\
& X4 X1 X2) \wedge ((v1\_lopban\_1 X4 X1 X2) \wedge ((v2\_lopban\_1 X4 X1 X2) \wedge (m1\_subset\_1 \\
& X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X2)))))))))) \Rightarrow \\
& ((v1\_funct\_1 (k1\_partfun1 (u1\_struct\_0 X0) (u1\_struct\_0 X1) ( \\
& u1\_struct\_0 X1) (u1\_struct\_0 X2) X3 X4) \wedge ((v2\_ndiff\_1 (k1\_partfun1 \\
& (u1\_struct\_0 X0) (u1\_struct\_0 X1) (u1\_struct\_0 X1) (u1\_struct\_0 \\
& X2) X3 X4) X0 X2) \wedge (m1\_subset\_1 (k1\_partfun1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X1) (u1\_struct\_0 X1) (u1\_struct\_0 X2) X3 X4) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X0) (u1\_struct\_0 X2))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v7\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\
& ((v5\_rlvect\_1 X0) \wedge ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 \\
& X0) \wedge ((v3\_normsp\_0 X0) \wedge ((v4\_normsp\_0 X0) \wedge ((v2\_normsp\_1 X0) \wedge \\
& (l1\_normsp\_1 X0)))))))))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\
& ((\neg v7\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge (( \\
& v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v5\_rlvect\_1 X1) \wedge ((v6\_rlvect\_1 \\
& X1) \wedge ((v7\_rlvect\_1 X1) \wedge ((v8\_rlvect\_1 X1) \wedge ((v3\_normsp\_0 X1) \wedge \\
& ((v4\_normsp\_0 X1) \wedge ((v2\_normsp\_1 X1) \wedge (l1\_normsp\_1 X1)))))))))) \Rightarrow \\
& (\forall X2.((v1\_funct\_1 X2) \wedge ((v2\_ndiff\_1 X2 X1 X0) \wedge (m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X0)))))) \Rightarrow \\
& (\forall X3.((v1\_funct\_1 X3) \wedge ((v2\_ndiff\_1 X3 X1 X0) \wedge (m1\_subset\_1 \\
& X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X0)))))) \Rightarrow \\
& (((v1\_funct\_1 (k6\_vfunct\_1 (u1\_struct\_0 X1) X0 X2 X3)) \wedge ((v2\_ndiff\_1 \\
& (k6\_vfunct\_1 (u1\_struct\_0 X1) X0 X2 X3) X1 X0) \wedge (m1\_subset\_1 (k6\_vfunct\_1 \\
& (u1\_struct\_0 X1) X0 X2 X3) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X1) (u1\_struct\_0 X0)))))) \wedge ((v1\_funct\_1 (k2\_vfunct\_1 (u1\_struct\_0 \\
& X1) X0 X2 X3)) \wedge ((v2\_ndiff\_1 (k2\_vfunct\_1 (u1\_struct\_0 X1) X0 X2 \\
& X3) X1 X0) \wedge (m1\_subset\_1 (k2\_vfunct\_1 (u1\_struct\_0 X1) X0 X2 X3) \\
& (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X0)))))))))) \Rightarrow \\
& \hspace{15em} (2)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v7\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\
& ((v5\_rlvect\_1 X0) \wedge ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 \\
& X0) \wedge ((v3\_normsp\_0 X0) \wedge ((v4\_normsp\_0 X0) \wedge ((v2\_normsp\_1 X0) \wedge \\
& (l1\_normsp\_1 X0)))))))))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\
& ((\neg v7\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge (( \\
& v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v5\_rlvect\_1 X1) \wedge ((v6\_rlvect\_1 \\
& X1) \wedge ((v7\_rlvect\_1 X1) \wedge ((v8\_rlvect\_1 X1) \wedge ((v3\_normsp\_0 X1) \wedge \\
& (v4\_normsp\_0 X1) \wedge ((v2\_normsp\_1 X1) \wedge (l1\_normsp\_1 X1)))))))))) \Rightarrow \\
& (\forall X2.((\neg v2\_struct\_0 X2) \wedge ((\neg v7\_struct\_0 X2) \wedge ((v13\_algstr\_0 \\
& X2) \wedge ((v2\_rlvect\_1 X2) \wedge ((v3\_rlvect\_1 X2) \wedge ((v4\_rlvect\_1 X2) \wedge \\
& ((v5\_rlvect\_1 X2) \wedge ((v6\_rlvect\_1 X2) \wedge ((v7\_rlvect\_1 X2) \wedge ((v8\_rlvect\_1 \\
& X2) \wedge ((v3\_normsp\_0 X2) \wedge ((v4\_normsp\_0 X2) \wedge ((v2\_normsp\_1 X2) \wedge \\
& (l1\_normsp\_1 X2)))))))))) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge \\
& ((v2\_ndiff\_1 X3 X0 X1) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow ((k7\_partfun1 (u1\_struct\_0 \\
& X1) X3 (k4\_struct\_0 X0) = k4\_struct\_0 X1) \Rightarrow (\forall X4.((v1\_funct\_1 \\
& X4) \wedge ((v2\_ndiff\_1 X4 X1 X2) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X1) (u1\_struct\_0 X2)))))) \Rightarrow ((k7\_partfun1 (u1\_struct\_0 \\
& X2) X4 (k4\_struct\_0 X1) = k4\_struct\_0 X2) \Rightarrow (\forall X5.((v1\_funct\_1 \\
& X5) \wedge ((v1\_funct\_2 X5 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge ((v13\_vectsp\_1 \\
& X5 X0 X1) \wedge ((v1\_lopban\_1 X5 X0 X1) \wedge ((v2\_lopban\_1 X5 X0 X1) \wedge (m1\_subset\_1 \\
& X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow \\
& ((v1\_funct\_1 (k1\_partfun1 (u1\_struct\_0 X0) (u1\_struct\_0 X1) ( \\
& u1\_struct\_0 X1) (u1\_struct\_0 X2) (k6\_vfunct\_1 (u1\_struct\_0 X0) \\
& X1 X5 X3) X4) \wedge ((v2\_ndiff\_1 (k1\_partfun1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X1) (u1\_struct\_0 X1) (u1\_struct\_0 X2) (k6\_vfunct\_1 (u1\_struct\_0 \\
& X0) X1 X5 X3) X4) X0 X2) \wedge (m1\_subset\_1 (k1\_partfun1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X1) (u1\_struct\_0 X1) (u1\_struct\_0 X2) (k6\_vfunct\_1 \\
& (u1\_struct\_0 X0) X1 X5 X3) X4) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X2))))))))))
\end{aligned} \tag{3}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v7\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\
& ((v5\_rlvect\_1 X0) \wedge ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 \\
& X0) \wedge ((v3\_normsp\_0 X0) \wedge ((v4\_normsp\_0 X0) \wedge ((v2\_normsp\_1 X0) \wedge \\
& (l1\_normsp\_1 X0)))))))))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\
& ((\neg v7\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge (( \\
& v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v5\_rlvect\_1 X1) \wedge ((v6\_rlvect\_1 \\
& X1) \wedge ((v7\_rlvect\_1 X1) \wedge ((v8\_rlvect\_1 X1) \wedge ((v3\_normsp\_0 X1) \wedge \\
& (v4\_normsp\_0 X1) \wedge ((v2\_normsp\_1 X1) \wedge (l1\_normsp\_1 X1)))))))))) \Rightarrow \\
& (\forall X2.((\neg v2\_struct\_0 X2) \wedge ((\neg v7\_struct\_0 X2) \wedge ((v13\_algstr\_0 \\
& X2) \wedge ((v2\_rlvect\_1 X2) \wedge ((v3\_rlvect\_1 X2) \wedge ((v4\_rlvect\_1 X2) \wedge \\
& ((v5\_rlvect\_1 X2) \wedge ((v6\_rlvect\_1 X2) \wedge ((v7\_rlvect\_1 X2) \wedge ((v8\_rlvect\_1 \\
& X2) \wedge ((v3\_normsp\_0 X2) \wedge ((v4\_normsp\_0 X2) \wedge ((v2\_normsp\_1 X2) \wedge \\
& (l1\_normsp\_1 X2)))))))))) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge \\
& ((v2\_ndiff\_1 X3 X0 X1) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow ((k7\_partfun1 (u1\_struct\_0 \\
& X1) X3 (k4\_struct\_0 X0) = k4\_struct\_0 X1) \Rightarrow (\forall X4.((v1\_funct\_1 \\
& X4) \wedge ((v2\_ndiff\_1 X4 X1 X2) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X1) (u1\_struct\_0 X2)))))) \Rightarrow ((k7\_partfun1 (u1\_struct\_0 \\
& X2) X4 (k4\_struct\_0 X1) = k4\_struct\_0 X2) \Rightarrow (\forall X5.((v1\_funct\_1 \\
& X5) \wedge ((v1\_funct\_2 X5 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge ((v13\_vectsp\_1 \\
& X5 X0 X1) \wedge ((v1\_lopban\_1 X5 X0 X1) \wedge ((v2\_lopban\_1 X5 X0 X1) \wedge (m1\_subset\_1 \\
& X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))))))) \Rightarrow \\
& (\forall X6.((v1\_funct\_1 X6) \wedge ((v1\_funct\_2 X6 (u1\_struct\_0 X1) \\
& (u1\_struct\_0 X2)) \wedge ((v13\_vectsp\_1 X6 X1 X2) \wedge ((v1\_lopban\_1 X6 X1 \\
& X2) \wedge ((v2\_lopban\_1 X6 X1 X2) \wedge (m1\_subset\_1 X6 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X1) (u1\_struct\_0 X2)))))))))) \Rightarrow ((v1\_funct\_1 (k6\_vfunct\_1 \\
& (u1\_struct\_0 X0) X2 (k1\_partfun1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X1) (u1\_struct\_0 X1) (u1\_struct\_0 X2) X3 X6) (k1\_partfun1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X1) (u1\_struct\_0 X1) (u1\_struct\_0 X2) (k6\_vfunct\_1 \\
& (u1\_struct\_0 X0) X1 X5 X3) X4)) \wedge ((v2\_ndiff\_1 (k6\_vfunct\_1 (u1\_struct\_0 \\
& X0) X2 (k1\_partfun1 (u1\_struct\_0 X0) (u1\_struct\_0 X1) (u1\_struct\_0 \\
& X1) (u1\_struct\_0 X2) X3 X6) (k1\_partfun1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X1) (u1\_struct\_0 X1) (u1\_struct\_0 X2) (k6\_vfunct\_1 (u1\_struct\_0 \\
& X0) X1 X5 X3) X4)) X0 X2) \wedge (m1\_subset\_1 (k6\_vfunct\_1 (u1\_struct\_0 \\
& X0) X2 (k1\_partfun1 (u1\_struct\_0 X0) (u1\_struct\_0 X1) (u1\_struct\_0 \\
& X1) (u1\_struct\_0 X2) X3 X6) (k1\_partfun1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X1) (u1\_struct\_0 X1) (u1\_struct\_0 X2) (k6\_vfunct\_1 (u1\_struct\_0 \\
& X0) X1 X5 X3) X4)) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X2))))))))))
\end{aligned}$$