

t20\_projdes1  
(TMKdSHnBqZ4HarkntZimy2CnBFB7f3x346b)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_collsp : \iota \Rightarrow o$  be given. Let  $v3\_collsp : \iota \Rightarrow o$  be given. Let  $v4\_collsp : \iota \Rightarrow o$  be given. Let  $v2\_anproj\_2 : \iota \Rightarrow o$  be given. Let  $v3\_anproj\_2 : \iota \Rightarrow o$  be given. Let  $v7\_anproj\_2 : \iota \Rightarrow o$  be given. Let  $l1\_collsp : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_projdes1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_collsp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\
& ((v4\_collsp X0) \wedge ((v2\_anproj\_2 X0) \wedge ((v3\_anproj\_2 X0) \wedge ((\neg v7\_anproj\_2 \\
& X0) \wedge (l1\_collsp X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4. (m1\_subset\_1 X4 \\
& (u1\_struct\_0 X0)) \Rightarrow ((r1\_projdes1 X0 X1 X2 X3 X4) \Rightarrow ((r1\_projdes1 \\
& X0 X2 X3 X4 X1) \wedge ((r1\_projdes1 X0 X3 X4 X1 X2) \wedge ((r1\_projdes1 X0 X4 X1 \\
& X2 X3) \wedge ((r1\_projdes1 X0 X2 X1 X3 X4) \wedge ((r1\_projdes1 X0 X3 X2 X4 X1) \wedge \\
& ((r1\_projdes1 X0 X4 X3 X1 X2) \wedge ((r1\_projdes1 X0 X1 X4 X2 X3) \wedge ((r1\_projdes1 \\
& X0 X1 X3 X4 X2) \wedge ((r1\_projdes1 X0 X2 X4 X1 X3) \wedge ((r1\_projdes1 X0 X3 X1 \\
& X2 X4) \wedge ((r1\_projdes1 X0 X4 X2 X3 X1) \wedge ((r1\_projdes1 X0 X3 X1 X4 X2) \wedge \\
& ((r1\_projdes1 X0 X4 X2 X1 X3) \wedge ((r1\_projdes1 X0 X1 X3 X2 X4) \wedge ((r1\_projdes1 \\
& X0 X2 X4 X3 X1) \wedge ((r1\_projdes1 X0 X1 X2 X4 X3) \wedge ((r1\_projdes1 X0 X1 X4 \\
& X3 X2) \wedge ((r1\_projdes1 X0 X2 X3 X1 X4) \wedge ((r1\_projdes1 X0 X2 X1 X4 X3) \wedge \\
& ((r1\_projdes1 X0 X3 X2 X1 X4) \wedge ((r1\_projdes1 X0 X3 X4 X2 X1) \wedge ((r1\_projdes1 \\
& X0 X4 X1 X3 X2) \wedge (r1\_projdes1 X0 X4 X3 X2 X1)))))))))))))))))))))
\end{aligned}$$

(1)

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\
& ((v4\_collsp X0) \wedge ((v2\_anproj\_2 X0) \wedge ((v3\_anproj\_2 X0) \wedge ((\neg v7\_anproj\_2 \\
& X0) \wedge (l1\_collsp X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\
& (u1\_struct\_0 X0)) \Rightarrow ((\neg(\neg r1\_collsp X0 X1 X2 X3) \wedge ((\neg r1\_collsp X0 \\
& X2 X3 X4) \wedge ((\neg r1\_collsp X0 X3 X4 X1) \wedge (\neg r1\_collsp X0 X4 X1 X2)))) \Rightarrow ( \\
& r1\_projdes1 X0 X1 X2 X3 X4))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\
& ((v4\_collsp X0) \wedge ((v2\_anproj\_2 X0) \wedge ((v3\_anproj\_2 X0) \wedge ((\neg v7\_anproj\_2 \\
& X0) \wedge (l1\_collsp X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow ((r1\_collsp X0 X1 X2 X3) \Rightarrow ((r1\_collsp \\
& X0 X2 X3 X1) \wedge ((r1\_collsp X0 X3 X1 X2) \wedge ((r1\_collsp X0 X2 X1 X3) \wedge ((r1\_collsp \\
& X0 X1 X3 X2) \wedge (r1\_collsp X0 X3 X2 X1))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\
& ((v4\_collsp X0) \wedge ((v2\_anproj\_2 X0) \wedge ((v3\_anproj\_2 X0) \wedge ((\neg v7\_anproj\_2 \\
& X0) \wedge (l1\_collsp X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\
& (u1\_struct\_0 X0)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow \\
& (\neg(\neg r1\_projdes1 X0 X1 X2 X3 X4) \wedge ((r1\_collsp X0 X4 X1 X5) \wedge ((X1 \neq X5) \wedge \\
& (r1\_projdes1 X0 X1 X2 X3 X5))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\
& ((v4\_collsp X0) \wedge ((v2\_anproj\_2 X0) \wedge ((v3\_anproj\_2 X0) \wedge ((\neg v7\_anproj\_2 \\
& X0) \wedge (l1\_collsp X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\
& (u1\_struct\_0 X0)) \Rightarrow ((\neg(X1 \neq X2) \wedge ((X1 \neq X3) \wedge ((X2 \neq X3) \wedge ((X1 \neq X4) \wedge \\
& ((X2 \neq X4) \wedge (X4 \neq X3)))))) \Rightarrow (r1\_projdes1 X0 X1 X2 X3 X4))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\
& ((v4\_collsp X0) \wedge ((v2\_anproj\_2 X0) \wedge ((v3\_anproj\_2 X0) \wedge ((\neg v7\_anproj\_2 \\
& X0) \wedge (l1\_collsp X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\
& (u1\_struct\_0 X0)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow \\
& (\neg(\neg r1\_collsp X0 X1 X2 X3) \wedge ((r1\_collsp X0 X1 X2 X4) \wedge ((r1\_collsp \\
& X0 X1 X3 X5) \wedge ((X1 \neq X4) \wedge (X4 = X5))))))))))
\end{aligned} \tag{6}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\
& ((v4\_collsp X0) \wedge ((v2\_anproj\_2 X0) \wedge ((v3\_anproj\_2 X0) \wedge ((\neg v7\_anproj\_2 \\
& X0) \wedge (l1\_collsp X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\
& (u1\_struct\_0 X0)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow \\
& (\forall X6.(m1\_subset\_1 X6 (u1\_struct\_0 X0)) \Rightarrow (\forall X7.(m1\_subset\_1 \\
& X7 (u1\_struct\_0 X0)) \Rightarrow (\forall X8.(m1\_subset\_1 X8 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X9.(m1\_subset\_1 X9 (u1\_struct\_0 X0)) \Rightarrow (\forall X10. \\
& (m1\_subset\_1 X10 (u1\_struct\_0 X0)) \Rightarrow (\forall X11.(m1\_subset\_1 \\
& X11 (u1\_struct\_0 X0)) \Rightarrow (\neg(r1\_projdes1 X0 X1 X2 X3 X4) \wedge ((\neg r1\_projdes1 \\
& X0 X1 X2 X3 X5) \wedge ((\neg r1\_projdes1 X0 X1 X2 X5 X4) \wedge ((r1\_collsp X0 X4 X5 \\
& X6) \wedge ((r1\_collsp X0 X4 X1 X7) \wedge ((r1\_collsp X0 X4 X2 X8) \wedge ((r1\_collsp \\
& X0 X1 X5 X9) \wedge ((r1\_collsp X0 X7 X6 X9) \wedge ((r1\_collsp X0 X2 X5 X10) \wedge (( \\
& r1\_collsp X0 X8 X6 X10) \wedge ((r1\_collsp X0 X3 X5 X11) \wedge ((X4 \neq X7) \wedge ((X5 \neq \\
& X6) \wedge ((X4 \neq X8) \wedge (r1\_collsp X0 X9 X10 X11))))))))))))))))))
\end{aligned}$$