

# t18\_projdes1 (TMUzDSkZrKXmAkLAUexHz- gaX54EqR2kfNGa)

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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.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_collsp X0) \wedge (v3\_collsp X0) \wedge \\
 & ((v4\_collsp X0) \wedge (v2\_anproj\_2 X0) \wedge (v3\_anproj\_2 X0) \wedge (\neg v7\_anproj\_2 \\
 & X0) \wedge (l1\_collsp X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 \\
 & X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
 & (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4. (m1\_subset\_1 X4 \\
 & (u1\_struct\_0 X0)) \Rightarrow ((r1\_projdes1 X0 X1 X2 X3 X4) \Rightarrow ((r1\_projdes1 \\
 & X0 X2 X3 X4 X1) \wedge ((r1\_projdes1 X0 X3 X4 X1 X2) \wedge ((r1\_projdes1 X0 X4 X1 \\
 & X2 X3) \wedge ((r1\_projdes1 X0 X2 X1 X3 X4) \wedge ((r1\_projdes1 X0 X3 X2 X4 X1) \wedge \\
 & ((r1\_projdes1 X0 X4 X3 X1 X2) \wedge ((r1\_projdes1 X0 X1 X4 X2 X3) \wedge ((r1\_projdes1 \\
 & X0 X1 X3 X4 X2) \wedge ((r1\_projdes1 X0 X2 X4 X1 X3) \wedge ((r1\_projdes1 X0 X3 X1 \\
 & X2 X4) \wedge ((r1\_projdes1 X0 X4 X2 X3 X1) \wedge ((r1\_projdes1 X0 X3 X1 X4 X2) \wedge \\
 & ((r1\_projdes1 X0 X4 X2 X1 X3) \wedge ((r1\_projdes1 X0 X1 X3 X2 X4) \wedge ((r1\_projdes1 \\
 & X0 X2 X4 X3 X1) \wedge ((r1\_projdes1 X0 X1 X2 X4 X3) \wedge ((r1\_projdes1 X0 X1 X4 \\
 & X3 X2) \wedge ((r1\_projdes1 X0 X2 X3 X1 X4) \wedge ((r1\_projdes1 X0 X2 X1 X4 X3) \wedge \\
 & ((r1\_projdes1 X0 X3 X2 X1 X4) \wedge ((r1\_projdes1 X0 X3 X4 X2 X1) \wedge ((r1\_projdes1 \\
 & X0 X4 X1 X3 X2) \wedge (r1\_projdes1 X0 X4 X3 X2 X1))))))))))))))))) \\
 & \hspace{15em} (1)
 \end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\
& ((v4\_collsp X0) \wedge ((v2\_anproj\_2 X0) \wedge ((v3\_anproj\_2 X0) \wedge ((\neg v7\_anproj\_2 \\
& X0) \wedge (l1\_collsp X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\
& (u1\_struct\_0 X0)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow \\
& (((r1\_projdes1 X0 X1 X2 X3 X4) \wedge (r1\_projdes1 X0 X1 X2 X3 X5)) \Rightarrow ((r1\_collsp \\
& X0 X1 X2 X3) \vee (r1\_projdes1 X0 X1 X2 X4 X5)))))))))
\end{aligned} \tag{2}$$

**Theorem 1**

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