

# t5\_projdes1 (TMNutfJamwRbX-goWwDY1TwGykae6ZcmpVMi)

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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  $r1\_collsp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct.0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\ & (l1\_collsp X0)))) \Rightarrow (\forall X1.(m1\_subset.1 X1 (u1\_struct.0 X0)) \Rightarrow \\ & (\forall X2.(m1\_subset.1 X2 (u1\_struct.0 X0)) \Rightarrow (\forall X3.(m1\_subset.1 \\ & X3 (u1\_struct.0 X0)) \Rightarrow (\forall X4.(m1\_subset.1 X4 (u1\_struct.0 \\ & X0)) \Rightarrow (((r1\_collsp X0 X1 X2 X3) \wedge (r1\_collsp X0 X1 X2 X4)) \Rightarrow ((X1 = X2) \vee \\ & (r1\_collsp X0 X1 X3 X4))))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct.0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\ & ((v4\_collsp X0) \wedge ((v2\_anproj.2 X0) \wedge ((v3\_anproj.2 X0) \wedge ((\neg v7\_anproj.2 \\ & X0) \wedge (l1\_collsp X0)))))))) \Rightarrow (\forall X1.(m1\_subset.1 X1 (u1\_struct.0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset.1 X2 (u1\_struct.0 X0)) \Rightarrow (\forall X3. \\ & (m1\_subset.1 X3 (u1\_struct.0 X0)) \Rightarrow ((r1\_collsp X0 X1 X2 X3) \Rightarrow ((r1\_collsp \\ & X0 X2 X3 X1) \wedge ((r1\_collsp X0 X3 X1 X2) \wedge ((r1\_collsp X0 X2 X1 X3) \wedge ((r1\_collsp \\ & X0 X1 X3 X2) \wedge (r1\_collsp X0 X3 X2 X1)))))))))) \end{aligned} \tag{2}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct.0 X0) \wedge ((v2\_collsp X0) \wedge ((v3\_collsp X0) \wedge \\ & ((v4\_collsp X0) \wedge ((v2\_anproj.2 X0) \wedge ((v3\_anproj.2 X0) \wedge ((\neg v7\_anproj.2 \\ & X0) \wedge (l1\_collsp X0)))))))) \Rightarrow (\forall X1.(m1\_subset.1 X1 (u1\_struct.0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset.1 X2 (u1\_struct.0 X0)) \Rightarrow (\forall X3. \\ & (m1\_subset.1 X3 (u1\_struct.0 X0)) \Rightarrow (\forall X4.(m1\_subset.1 X4 \\ & (u1\_struct.0 X0)) \Rightarrow (\forall X5.(m1\_subset.1 X5 (u1\_struct.0 X0)) \Rightarrow \\ & (\forall X6.(m1\_subset.1 X6 (u1\_struct.0 X0)) \Rightarrow (\neg(\neg r1\_collsp \\ & X0 X1 X2 X3) \wedge ((r1\_collsp X0 X1 X3 X4) \wedge ((X3 \neq X4) \wedge ((r1\_collsp X0 X5 \\ & X4 X6) \wedge (r1\_collsp X0 X1 X2 X5) \wedge ((X1 \neq X5) \wedge (X6 = X3)))))))))))))) \end{aligned}$$