# t22_projdes1 (TM-Pio41xrW9rfYyR8JZXx85DBHWBXmspsqm)

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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 $v5\_anproj\_2 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $r1\_collsp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v2\_collsp\ X0) \wedge ((v3\_collsp\ X0) \wedge ((v4\_collsp\ X0) \wedge ((v2\_anproj\_2\ X0) \wedge ((v3\_anproj\_2\ X0) \wedge ((\neg v7\_anproj\_2\ X0) \wedge (l1\_collsp\ X0)))))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X6.(m1\_subset\_1\ X6\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X7.(m1\_subset\_1\ X7\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X8.(m1\_subset\_1\ X8\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X9.(m1\_subset\_1\ X9\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X10.(m1\_subset\_1\ X10\ (u1\_struct\_0\ X0)) \Rightarrow (((r1\_collsp\ X0\ X1\ X2\ X5) \wedge ((r1\_collsp\ X0\ X1\ X3\ X6) \wedge ((r1\_collsp\ X0\ X1\ X4\ X7) \wedge ((r1\_collsp\ X0\ X2\ X3\ X8) \wedge ((r1\_collsp\ X0\ X5\ X6\ X8) \wedge ((r1\_collsp\ X0\ X3\ X4\ X9) \wedge ((r1\_collsp\ X0\ X6\ X7\ X9) \wedge ((r1\_collsp\ X0\ X2\ X4\ X10) \wedge (r1\_collsp\ X0\ X5\ X7\ X10))))))))) \Rightarrow ((r1\_collsp\ X0\ X1\ X2\ X3) \vee ((r1\_collsp\ X0\ X1\ X3\ X4) \vee ((r1\_collsp\ X0\ X1\ X2\ X4) \vee ((X2 = X5) \vee ((X3 = X6) \vee ((X1 = X5) \vee ((X1 = X6) \vee ((X1 = X7) \vee (r1\_collsp\ X0\ X9\ X10\ X8))))))))))))))))))))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_collsp\ X0)\wedge((v3\_collsp\ X0)\wedge((v4\_collsp\ X0)\wedge((v2\_anproj\_2\ X0)\wedge((v3\_anproj\_2\ X0)\wedge(l1\_collsp\ X0)))))))\Rightarrow((v5\_anproj\_2\ X0)\Leftrightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0))\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X0))\Rightarrow(\forall X6.(m1\_subset\_1\ X6\ (u1\_struct\_0\ X0))\Rightarrow(\forall X7.(m1\_subset\_1\ X7\ (u1\_struct\_0\ X0))\Rightarrow(\forall X8.(m1\_subset\_1\ X8\ (u1\_struct\_0\ X0))\Rightarrow(\forall X9.(m1\_subset\_1\ X9\ (u1\_struct\_0\ X0))\Rightarrow(\forall X10.(m1\_subset\_1\ X10\ (u1\_struct\_0\ X0))\Rightarrow(((r1\_collsp\ X0\ X2\ X3\ X10)\wedge((r1\_collsp\ X0\ X5\ X6\ X10)\wedge((r1\_collsp\ X0\ X3\ X4\ X8)\wedge((r1\_collsp\ X0\ X6\ X7\ X8)\wedge((r1\_collsp\ X0\ X2\ X4\ X9)\wedge((r1\_collsp\ X0\ X5\ X7\ X9)\wedge((r1\_collsp\ X0\ X1\ X2\ X5)\wedge((r1\_collsp\ X0\ X1\ X3\ X6)\wedge(r1\_collsp\ X0\ X1\ X4\ X7)))))))))\Rightarrow((X1=X5)\vee((X2=X5)\vee((X1=X6)\vee((X3=X6)\vee((X1=X7)\vee((X4=X7)\vee((r1\_collsp\ X0\ X1\ X2\ X3)\vee((r1\_collsp\ X0\ X1\ X2\ X4)\vee((r1\_collsp\ X0\ X1\ X3\ X4)\vee(r1\_collsp\ X0\ X8\ X9\ X10))))))))))))))))))))))) \tag{2}$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_collsp\ X0)\wedge((v3\_collsp\ X0)\wedge((v4\_collsp\ X0)\wedge((v2\_anproj\_2\ X0)\wedge((v3\_anproj\_2\ X0)\wedge((\neg v7\_anproj\_2\ X0)\wedge(l1\_collsp\ X0)))))))\Rightarrow(v5\_anproj\_2\ X0)$$