

# t20\_projpl\_1 (TMJYqFtTyHw- gAE2QGR1orWrPagS31U52ttK)

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Let  $l1\_incsp\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_incsp\_1 : \iota \Rightarrow \iota$  be given. Let  $u2\_incsp\_1 : \iota \Rightarrow \iota$  be given. Let  $r5\_projpl\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r4\_incsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r4\_projpl\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(l1\_incsp\_1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_incsp\_1 \\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_incsp\_1 X0)) \Rightarrow (\forall X3. \\ (m1\_subset\_1 X3 (u1\_incsp\_1 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\ (u2\_incsp\_1 X0)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u2\_incsp\_1 X0)) \Rightarrow \\ (\neg(\neg r4\_projpl\_1 X0 X1 X2 X3) \wedge ((r4\_incsp\_1 X0 (k7\_domain\_1 (u1\_incsp\_1 \\ X0) X1 X2) X4) \wedge ((r4\_incsp\_1 X0 (k7\_domain\_1 (u1\_incsp\_1 X0) X1 X3) \\ X5) \wedge (X4 = X5)))))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_incsp\_1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_incsp\_1 \\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_incsp\_1 X0)) \Rightarrow (\forall X3. \\ (m1\_subset\_1 X3 (u1\_incsp\_1 X0)) \Rightarrow ((r4\_projpl\_1 X0 X1 X2 X3) \Rightarrow (( \\ r4\_projpl\_1 X0 X1 X3 X2) \wedge ((r4\_projpl\_1 X0 X2 X1 X3) \wedge ((r4\_projpl\_1 \\ X0 X2 X3 X1) \wedge ((r4\_projpl\_1 X0 X3 X1 X2) \wedge (r4\_projpl\_1 X0 X3 X2 X1)))))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_incsp\_1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_incsp\_1 \\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_incsp\_1 X0)) \Rightarrow (\forall X3. \\ (m1\_subset\_1 X3 (u1\_incsp\_1 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\ (u1\_incsp\_1 X0)) \Rightarrow ((r5\_projpl\_1 X0 X1 X2 X3 X4) \Leftrightarrow ((\neg r4\_projpl\_1 \\ X0 X1 X2 X3) \wedge ((\neg r4\_projpl\_1 X0 X2 X3 X4) \wedge ((\neg r4\_projpl\_1 X0 X3 X4 X1) \wedge \\ (\neg r4\_projpl\_1 X0 X4 X1 X2)))))))))) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(r1\_zfmisc\_1 X0 X1 X2) \Leftrightarrow ((X0 \neq X1) \wedge ((X0 \neq X2) \wedge (X1 \neq X2))) \tag{4}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(l1\_incsp\_1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_incsp\_1 \\ & \quad X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_incsp\_1 X0)) \Rightarrow (\forall X3. \\ & \quad (m1\_subset\_1 X3 (u1\_incsp\_1 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\ & \quad (u1\_incsp\_1 X0)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u2\_incsp\_1 X0)) \Rightarrow \\ & \quad (\forall X6.(m1\_subset\_1 X6 (u2\_incsp\_1 X0)) \Rightarrow (\forall X7.(m1\_subset\_1 \\ & \quad X7 (u2\_incsp\_1 X0)) \Rightarrow (((r5\_projpl\_1 X0 X1 X2 X3 X4) \wedge ((r4\_incsp\_1 \\ & \quad X0 (k7\_domain\_1 (u1\_incsp\_1 X0) X1 X2) X5) \wedge ((r4\_incsp\_1 X0 (k7\_domain\_1 \\ & \quad (u1\_incsp\_1 X0) X1 X3) X6) \wedge (r4\_incsp\_1 X0 (k7\_domain\_1 (u1\_incsp\_1 \\ & \quad X0) X1 X4) X7)))))) \Rightarrow (r1\_zfmisc\_1 X5 X6 X7))))))))) \end{aligned}$$