

# t10\_projred2 (TMKnAsZVT- GschFNR24qEnwNdKpxbYnsiMr8)

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Let  $v6\_incsp\_1 : \iota \Rightarrow o$  be given. Let  $v1\_incproj : \iota \Rightarrow o$  be given. Let  $v2\_incproj : \iota \Rightarrow o$  be given. Let  $v3\_incproj : \iota \Rightarrow o$  be given. Let  $v4\_incproj : \iota \Rightarrow o$  be given. Let  $v5\_incproj : \iota \Rightarrow o$  be given. Let  $v9\_incproj : \iota \Rightarrow o$  be given. 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  $r1\_incsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_projred1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_partfun1 : \iota \Rightarrow \iota$  be given. Let  $k1\_projred2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k4\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((v6\_incsp\_1 X0) \wedge ((v1\_incproj X0) \wedge ((v2\_incproj X0) \wedge \\
& ((v3\_incproj X0) \wedge ((v4\_incproj X0) \wedge ((v5\_incproj X0) \wedge ((v9\_incproj \\
& X0) \wedge (l1\_incsp\_1 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_incsp\_1 \\
& X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u2\_incsp\_1 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u2\_incsp\_1 X0)) \Rightarrow (\neg(\neg r1\_incsp\_1 X0 X1 X2) \wedge (\neg \\
& r1\_incsp\_1 X0 X1 X3) \wedge (k1\_relset\_1 (u1\_incsp\_1 X0) (k1\_projred1 \\
& X0 X2 X3 X1) \neq k1\_projred2 X0 X2))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v6\_incsp\_1 X0) \wedge ((v1\_incproj X0) \wedge ((v2\_incproj X0) \wedge \\
& ((v3\_incproj X0) \wedge ((v4\_incproj X0) \wedge ((v5\_incproj X0) \wedge ((v9\_incproj \\
& X0) \wedge (l1\_incsp\_1 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_incsp\_1 \\
& X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_incsp\_1 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u2\_incsp\_1 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\
& (u2\_incsp\_1 X0)) \Rightarrow (((r1\_incsp\_1 X0 X2 X3) \wedge (r1\_incsp\_1 X0 X2 X4)) \Rightarrow \\
& ((r1\_incsp\_1 X0 X1 X3) \vee ((r1\_incsp\_1 X0 X1 X4) \vee (k1\_funct\_1 (k1\_projred1 \\
& X0 X3 X4 X1) X2 = X2))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge(v1\_funct\_1 X1))\Rightarrow((X1 = k4\_relat\_1 X0)\Leftrightarrow((k9\_xtuple\_0 X1 = X0)\wedge(\forall X2.(X2 \in X0)\Rightarrow(k1\_funct\_1 X1 X2 = X2)))) \quad (3)$$

Assume the following.

$$\forall X0.k6\_partfun1 X0 = k4\_relat\_1 X0 \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge(v4\_relat\_1 X1 X0))\Rightarrow(k1\_relset\_1 X0 X1 = k9\_xtuple\_0 X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v6\_incsp\_1 X0)\wedge((v1\_incproj X0)\wedge((v2\_incproj X0)\wedge((v3\_incproj X0)\wedge((v4\_incproj X0)\wedge((v5\_incproj X0)\wedge((v9\_incproj X0)\wedge(l1\_incsp\_1 X0))))))))\wedge((m1\_subset\_1 X1 (u2\_incsp\_1 X0))\wedge((m1\_subset\_1 X2 (u2\_incsp\_1 X0))\wedge(m1\_subset\_1 X3 (u1\_incsp\_1 X0))))\Rightarrow((v1\_funct\_1 (k1\_projred1 X0 X1 X2 X3))\wedge(m1\_subset\_1 (k1\_projred1 X0 X1 X2 X3) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_incsp\_1 X0) (u1\_incsp\_1 X0)))))) \quad (6)$$

Assume the following.

$$\forall X0.(((v6\_incsp\_1 X0)\wedge((v1\_incproj X0)\wedge((v2\_incproj X0)\wedge((v3\_incproj X0)\wedge((v4\_incproj X0)\wedge(l1\_incsp\_1 X0))))))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u2\_incsp\_1 X0))\Rightarrow(k1\_projred2 X0 X1 = ReplSep ( toset (\lambda X2 : \iota.m1\_subset\_1 X2 (u1\_incsp\_1 X0)) (\lambda X2 : \iota.r1\_incsp\_1 X0 X2 X1) (\lambda X2 : \iota.X2)))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow((v4\_relat\_1 X2 X0)\wedge(v5\_relat\_1 X2 X1)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v1\_relat\_1 X2) \quad (9)$$

**Theorem 1**

$$\forall X0.(((v6\_incsp\_1 X0)\wedge((v1\_incproj X0)\wedge((v2\_incproj X0)\wedge((v3\_incproj X0)\wedge((v4\_incproj X0)\wedge((v5\_incproj X0)\wedge((v9\_incproj X0)\wedge(l1\_incsp\_1 X0))))))))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_incsp\_1 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u2\_incsp\_1 X0))\Rightarrow((\neg r1\_incsp\_1 X0 X1 X2)\Rightarrow(k1\_projred1 X0 X2 X2 X1 = k6\_partfun1 (k1\_projred2 X0 X2))))))$$