

# l82\_geomtrap (TMN- Fgi8z2H7TEGdUAtSfYMTfhVxHbGsnBGQ)

October 27, 2020

Let  $v2\_struct.0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr.0 : \iota \Rightarrow o$  be given. Let  $v2\_rlvect.1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect.1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect.1 : \iota \Rightarrow o$  be given. Let  $v5\_rlvect.1 : \iota \Rightarrow o$  be given. Let  $v6\_rlvect.1 : \iota \Rightarrow o$  be given. Let  $v7\_rlvect.1 : \iota \Rightarrow o$  be given. Let  $v8\_rlvect.1 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect.1 : \iota \Rightarrow o$  be given. Let  $m1\_subset.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct.0 : \iota \Rightarrow \iota$  be given. Let  $k7\_geomtrap : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_analmetr : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_analoaf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_geomtrap : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct.0 X0) \wedge ((v13\_algstr.0 X0) \wedge ((v2\_rlvect.1 X0) \wedge ((v3\_rlvect.1 X0) \wedge ((v4\_rlvect.1 X0) \wedge ((v5\_rlvect.1 X0) \wedge ((v6\_rlvect.1 X0) \wedge ((v7\_rlvect.1 X0) \wedge ((v8\_rlvect.1 X0) \wedge (l1\_rlvect.1 X0)))))))))) \Rightarrow (\forall X1.(m1\_subset.1 X1 (u1\_struct.0 X0)) \Rightarrow (\forall X2.(m1\_subset.1 X2 (u1\_struct.0 X0)) \Rightarrow (\forall X3.(m1\_subset.1 X3 (u1\_struct.0 X0)) \Rightarrow (\forall X4.(m1\_subset.1 X4 (u1\_struct.0 X0)) \Rightarrow (\forall X5.(m1\_subset.1 X5 (u1\_struct.0 X0)) \Rightarrow (\forall X6.(m1\_subset.1 X6 (u1\_struct.0 X0)) \Rightarrow (\forall X7.(m1\_subset.1 X7 (u1\_struct.0 (k7\_geomtrap X0 X5 X6)) \Rightarrow (\forall X8.(m1\_subset.1 X8 (u1\_struct.0 (k7\_geomtrap X0 X5 X6)) \Rightarrow (\forall X9.(m1\_subset.1 X9 (u1\_struct.0 (k7\_geomtrap X0 X5 X6)) \Rightarrow (\forall X10.(m1\_subset.1 X10 (u1\_struct.0 (k7\_geomtrap X0 X5 X6)) \Rightarrow (((X1 = X7) \wedge ((X2 = X8) \wedge ((X3 = X9) \wedge (X4 = X10)))) \Rightarrow ((r2\_analoaf (k7\_geomtrap X0 X5 X6) X7 X8 X9 X10) \Leftrightarrow (r2\_geomtrap X0 X5 X6 X1 X2 X3 X4))))))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct.0 X0) \wedge ((v13\_algstr.0 X0) \wedge ((v2\_rlvect.1 X0) \wedge ((v3\_rlvect.1 X0) \wedge ((v4\_rlvect.1 X0) \wedge ((v5\_rlvect.1 X0) \wedge ((v6\_rlvect.1 X0) \wedge ((v7\_rlvect.1 X0) \wedge ((v8\_rlvect.1 X0) \wedge (l1\_rlvect.1 X0)))))))))) \Rightarrow (\forall X1.(m1\_subset.1 X1 (u1\_struct.0 X0)) \Rightarrow (\forall X2.(m1\_subset.1 X2 (u1\_struct.0 X0)) \Rightarrow (\forall X3.(m1\_subset.1 X3 (u1\_struct.0 (k7\_geomtrap X0 X1 X2)) \Leftrightarrow (m1\_subset.1 X3 (u1\_struct.0 X0))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\
& X0)))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow \\
& (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 \\
& X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (\forall X6. \\
& (m1\_subset\_1 X6 (u1\_struct\_0 X0)) \Rightarrow (\forall X7.(m1\_subset\_1 X7 \\
& (u1\_struct\_0 X0)) \Rightarrow (((r1\_analmetr X0 X1 X2) \wedge (r2\_geomtrap X0 X1 \\
& X2 X3 X4 X5 X6)) \Rightarrow ((X3 = X4) \vee (((\neg r2\_geomtrap X0 X1 X2 X3 X4 X5 X7) \wedge (\neg \\
& r2\_geomtrap X0 X1 X2 X3 X4 X7 X5)) \vee (X6 = X7))))))))))))) \tag{3}
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\
& X0)))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow \\
& (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 \\
& X3 (u1\_struct\_0 (k7\_geomtrap X0 X1 X2))) \Rightarrow (\forall X4.(m1\_subset\_1 \\
& X4 (u1\_struct\_0 (k7\_geomtrap X0 X1 X2))) \Rightarrow (\forall X5.(m1\_subset\_1 \\
& X5 (u1\_struct\_0 (k7\_geomtrap X0 X1 X2))) \Rightarrow (\forall X6.(m1\_subset\_1 \\
& X6 (u1\_struct\_0 (k7\_geomtrap X0 X1 X2))) \Rightarrow (\forall X7.(m1\_subset\_1 \\
& X7 (u1\_struct\_0 (k7\_geomtrap X0 X1 X2))) \Rightarrow (\neg (r1\_analmetr X0 X1 X2) \wedge \\
& ((r2\_analoaf (k7\_geomtrap X0 X1 X2) X3 X4 X5 X6) \wedge ((r2\_analoaf (k7\_geomtrap \\
& X0 X1 X2) X3 X4 X5 X7) \wedge ((X3 \neq X4) \wedge (X6 \neq X7)))))))))))))
\end{aligned}$$