

## t3\_homothet

(TMVNLRqJp1g4KPWqtdf5Tg91tgGvrt6wk3E)

October 27, 2020

Let  $v7\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_diraf : \iota \Rightarrow o$  be given. Let  $v2\_diraf : \iota \Rightarrow o$  be given. Let  $l1\_analoaf : \iota \Rightarrow o$  be given. Let  $v4\_aff\_2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_aff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v6\_transgeo : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_analoaf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge ((v2\_diraf X0) \wedge \\
 & \quad (l1\_analoaf X0)))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 \\
 & \quad X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
 & \quad (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4. ((v1\_funct\_1 X4) \wedge \\
 & \quad ((v1\_funct\_2 X4 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge ((v3\_funct\_2 \\
 & \quad X4 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\
 & \quad (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \Rightarrow (((r1\_aff\_1 \\
 & \quad X0 X1 X2 X3) \wedge ((v4\_aff\_2 X0) \wedge (\forall X5. (m1\_subset\_1 X5 (u1\_struct\_0 \\
 & \quad X0)) \Rightarrow (\forall X6. (m1\_subset\_1 X6 (u1\_struct\_0 X0)) \Rightarrow ((k3\_funct\_2 \\
 & \quad (u1\_struct\_0 X0) (u1\_struct\_0 X0) X4 X5 = X6) \Leftrightarrow (((\neg r1\_aff\_1 X0 X1 \\
 & \quad X2 X5) \wedge ((r1\_aff\_1 X0 X1 X5 X6) \wedge (r2\_analoaf X0 X2 X5 X3 X6))) \vee ((r1\_aff\_1 \\
 & \quad X0 X1 X2 X5) \wedge (\exists X7. (m1\_subset\_1 X7 (u1\_struct\_0 X0)) \wedge (\exists X8. \\
 & \quad (m1\_subset\_1 X8 (u1\_struct\_0 X0)) \wedge ((\neg r1\_aff\_1 X0 X1 X2 X7) \wedge ((r1\_aff\_1 \\
 & \quad X0 X1 X7 X8) \wedge ((r2\_analoaf X0 X2 X7 X3 X8) \wedge ((r2\_analoaf X0 X7 X5 X8 X6) \wedge \\
 & \quad (r1\_aff\_1 X0 X1 X2 X6)))))))))) \Rightarrow ((X1 = X2) \vee ((v6\_transgeo X4 \\
 & \quad X0) \wedge ((k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X0) X4 X1 = X1) \wedge \\
 & \quad (k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X0) X4 X2 = X3))))))
 \end{aligned}$$

(1)

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge ((v2\_diraf X0) \wedge \\
& \quad (l1\_analoaf X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\
& \quad X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& \quad (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\neg(v4\_aff\_2 X0) \wedge ((X1 \neq X2) \wedge \\
& \quad ((X1 \neq X3) \wedge ((r1\_aff\_1 X0 X1 X2 X3) \wedge (\forall X4.((v1\_funct\_1 X4) \wedge \\
& \quad ((v1\_funct\_2 X4 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge ((v3\_funct\_2 \\
& \quad X4 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \Rightarrow (\neg \forall X5. \\
& \quad (m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (\forall X6.(m1\_subset\_1 X6 \\
& \quad (u1\_struct\_0 X0)) \Rightarrow ((k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& \quad X0) X4 X5 = X6) \Leftrightarrow (((\neg r1\_aff\_1 X0 X1 X2 X5) \wedge ((r1\_aff\_1 X0 X1 X5 X6) \wedge ( \\
& \quad r2\_analoaf X0 X2 X5 X3 X6))) \vee ((r1\_aff\_1 X0 X1 X2 X5) \wedge (\exists X7. \\
& \quad (m1\_subset\_1 X7 (u1\_struct\_0 X0)) \wedge (\exists X8.(m1\_subset\_1 X8 \\
& \quad (u1\_struct\_0 X0)) \wedge ((\neg r1\_aff\_1 X0 X1 X2 X7) \wedge ((r1\_aff\_1 X0 X1 X7 X8) \wedge \\
& \quad ((r2\_analoaf X0 X2 X7 X3 X8) \wedge ((r2\_analoaf X0 X7 X5 X8 X6) \wedge (r1\_aff\_1 \\
& \quad X0 X1 X2 X6))))))))))))))))) \\
& \tag{2}
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge ((v2\_diraf X0) \wedge \\
& \quad (l1\_analoaf X0)))) \Rightarrow ((v4\_aff\_2 X0) \Rightarrow (\forall X1.(m1\_subset\_1 \\
& \quad X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\
& \quad X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\neg(X1 \neq X2) \wedge \\
& \quad ((X1 \neq X3) \wedge ((r1\_aff\_1 X0 X1 X2 X3) \wedge (\forall X4.((v1\_funct\_1 X4) \wedge \\
& \quad ((v1\_funct\_2 X4 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge ((v3\_funct\_2 \\
& \quad X4 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \Rightarrow (\neg(v6\_transgeo \\
& \quad X4 X0) \wedge ((k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X0) X4 X1 = X1) \wedge \\
& \quad (k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X0) X4 X2 = X3)))))))))))))
\end{aligned}$$