

t17\_tdgrouP (TMcSoT-  
dGYAGSafZpjypVq7vT8uDRUJQ9kmg)

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  $v12\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v1\_tdgroup : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v7\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k2\_tdgroup : \iota \Rightarrow \iota$  be given. Let  $v2\_tdgroup : \iota \Rightarrow o$  be given. Let  $l1\_analoaf : \iota \Rightarrow o$  be given. Let  $r2\_analoaf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_analoaf : \iota \Rightarrow o$  be given.

Let  $l1\_struct\_0 : \iota \Rightarrow o$  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 ((v12\_vectsp\_1 X0) \wedge \\
& ((v1\_tdgroup X0) \wedge (l2\_algstr\_0 X0)))))))) \Rightarrow ((\neg \forall X1.(m1\_subset\_1 \\
& X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\
& X0)) \Rightarrow (X1 = X2))) \Rightarrow ((\neg \forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 ( \\
& k2\_tdgroup X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 (k2\_tdgroup \\
& X0))) \Rightarrow (X1 = X2))) \wedge ((\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 ( \\
& k2\_tdgroup X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 (k2\_tdgroup \\
& X0))) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 (k2\_tdgroup X0))) \Rightarrow \\
& ((r2\_analoaf (k2\_tdgroup X0) X1 X2 X3 X3) \Rightarrow (X1 = X2)))))) \wedge ((\forall X1. \\
& (m1\_subset\_1 X1 (u1\_struct\_0 (k2\_tdgroup X0))) \Rightarrow (\forall X2.( \\
& m1\_subset\_1 X2 (u1\_struct\_0 (k2\_tdgroup X0))) \Rightarrow (\forall X3.(m1\_subset\_1 \\
& X3 (u1\_struct\_0 (k2\_tdgroup X0))) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\
& (u1\_struct\_0 (k2\_tdgroup X0))) \Rightarrow (\forall X5.(m1\_subset\_1 X5 ( \\
& u1\_struct\_0 (k2\_tdgroup X0))) \Rightarrow (\forall X6.(m1\_subset\_1 X6 (u1\_struct\_0 \\
& (k2\_tdgroup X0))) \Rightarrow (((r2\_analoaf (k2\_tdgroup X0) X1 X2 X5 X6) \wedge ( \\
& r2\_analoaf (k2\_tdgroup X0) X3 X4 X5 X6)) \Rightarrow (r2\_analoaf (k2\_tdgroup \\
& X0) X1 X2 X3 X4)))))) \wedge ((\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\
& (k2\_tdgroup X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 ( \\
& k2\_tdgroup X0))) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 (k2\_tdgroup \\
& X0))) \Rightarrow (\exists X4.(m1\_subset\_1 X4 (u1\_struct\_0 (k2\_tdgroup X0))) \wedge \\
& (r2\_analoaf (k2\_tdgroup X0) X1 X2 X3 X4)))))) \wedge ((\forall X1.(m1\_subset\_1 \\
& X1 (u1\_struct\_0 (k2\_tdgroup X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\
& (u1\_struct\_0 (k2\_tdgroup X0))) \Rightarrow (\forall X3.(m1\_subset\_1 X3 ( \\
& u1\_struct\_0 (k2\_tdgroup X0))) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 \\
& (k2\_tdgroup X0))) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 ( \\
& k2\_tdgroup X0))) \Rightarrow (\forall X6.(m1\_subset\_1 X6 (u1\_struct\_0 (k2\_tdgroup \\
& X0))) \Rightarrow (((r2\_analoaf (k2\_tdgroup X0) X1 X2 X4 X5) \wedge (r2\_analoaf ( \\
& k2\_tdgroup X0) X1 X3 X4 X6)) \Rightarrow (r2\_analoaf (k2\_tdgroup X0) X2 X3 X5 \\
& X6)))))) \wedge ((\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k2\_tdgroup \\
& X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 (k2\_tdgroup X0))) \Rightarrow \\
& (\exists X3.(m1\_subset\_1 X3 (u1\_struct\_0 (k2\_tdgroup X0))) \wedge ( \\
& r2\_analoaf (k2\_tdgroup X0) X1 X3 X3 X2)))) \wedge ((\forall X1.(m1\_subset\_1 \\
& X1 (u1\_struct\_0 (k2\_tdgroup X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\
& (u1\_struct\_0 (k2\_tdgroup X0))) \Rightarrow (\forall X3.(m1\_subset\_1 X3 ( \\
& u1\_struct\_0 (k2\_tdgroup X0))) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 \\
& (k2\_tdgroup X0))) \Rightarrow (((r2\_analoaf (k2\_tdgroup X0) X1 X2 X2 X3) \wedge ( \\
& r2\_analoaf (k2\_tdgroup X0) X1 X4 X4 X3)) \Rightarrow (X2 = X4)))))) \wedge ((\forall X1. \\
& (m1\_subset\_1 X1 (u1\_struct\_0 (k2\_tdgroup X0))) \Rightarrow (\forall X2.( \\
& m1\_subset\_1 X2 (u1\_struct\_0 (k2\_tdgroup X0))) \Rightarrow (\forall X3.(m1\_subset\_1 \\
& X3 (u1\_struct\_0 (k2\_tdgroup X0))) \Rightarrow (\forall X4.(m1\_subset\_1 X4 \\
& (u1\_struct\_0 (k2\_tdgroup X0))) \Rightarrow ((r2\_analoaf (k2\_tdgroup X0) \\
& X1 X2 X3 X4) \Rightarrow (r2\_analoaf (k2\_tdgroup X0) X1 X3 X2 X4)))))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l2\_algstr\_0 X0)) \Rightarrow ((\neg v2\_struct\_0 (k2\_tdgroup X0)) \wedge (v1\_analoaf (k2\_tdgroup X0))) \quad (2)$$

Assume the following.

$$\forall X0.(l1\_analoaf X0) \Rightarrow (l1\_struct\_0 X0) \quad (3)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l2\_algstr\_0 X0)) \Rightarrow ((v1\_analoaf (k2\_tdgroup X0)) \wedge (l1\_analoaf (k2\_tdgroup X0))) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_analoaf X0)) \Rightarrow ((v2\_tdgroup 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 ((r2\_analoaf X0 X1 X2 X3 X3) \Rightarrow (X1 = X2)))))) \wedge ((\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 (((r2\_analoaf X0 X1 X2 X5 X6) \wedge (r2\_analoaf X0 X3 X4 X5 X6)) \Rightarrow (r2\_analoaf X0 X1 X2 X3 X4)))))))))) \wedge ((\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 (\exists X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0)) \wedge (r2\_analoaf X0 X1 X2 X3 X4)))))) \wedge ((\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 (((r2\_analoaf X0 X1 X2 X4 X5) \wedge (r2\_analoaf X0 X1 X3 X4 X6)) \Rightarrow (r2\_analoaf X0 X2 X3 X5 X6)))))))))) \wedge ((\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\exists X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \wedge (r2\_analoaf X0 X1 X3 X3 X2)))))) \wedge ((\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 (((r2\_analoaf X0 X1 X2 X2 X3) \wedge (r2\_analoaf X0 X1 X4 X4 X3)) \Rightarrow (X2 = X4)))))) \wedge ((\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 ((r2\_analoaf X0 X1 X2 X3 X4) \Rightarrow (r2\_analoaf X0 X1 X3 X2 X4)))))))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0) \Rightarrow ((v7\_struct\_0 X0) \Leftrightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (X1 = X2)))))) \quad (6)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v12\_vectsp\_1 X0) \wedge ((v1\_tdgroup X0) \wedge (l2\_algstr\_0 X0)))))))))) \Rightarrow ((\neg \forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (X1 = X2))) \Rightarrow ((\neg v7\_struct\_0 (k2\_tdgroup X0)) \wedge ((v2\_tdgroup (k2\_tdgroup X0)) \wedge (l1\_analoaf (k2\_tdgroup X0))))))$$