

# t5\_autgroup (TM- SCAs5hh1kprt5mYNTJZGDQ8VeVArh1u1q)

October 27, 2020

Let  $v2\_struct.0 : \iota \Rightarrow o$  be given. Let  $v15\_algstr.0 : \iota \Rightarrow o$  be given. Let  $v2\_group.1 : \iota \Rightarrow o$  be given. Let  $v3\_group.1 : \iota \Rightarrow o$  be given. Let  $l3\_algstr.0 : \iota \Rightarrow o$  be given. Let  $m2\_funct.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct.0 : \iota \Rightarrow \iota$  be given. Let  $k1\_autgroup : \iota \Rightarrow \iota$  be given. Let  $v1\_funct.1 : \iota \Rightarrow o$  be given. Let  $k2\_funct.1 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_group.6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc.1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_funct.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole.0 : \iota \Rightarrow o$  be given. Let  $m1\_funct.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_struct.0 : \iota \Rightarrow o$  be given. Let  $v2\_funct.1 : \iota \Rightarrow o$  be given. Let  $v2\_funct.2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct.0 X0) \wedge ((v2\_group.1 X0) \wedge ((v3\_group.1 \\ & X0) \wedge (l3\_algstr.0 X0)))) \Rightarrow (\forall X1.((\neg v2\_struct.0 X1) \wedge ((v15\_algstr.0 \\ & X1) \wedge ((v2\_group.1 X1) \wedge ((v3\_group.1 X1) \wedge (l3\_algstr.0 X1)))))) \Rightarrow \\ & (\forall X2.((v1\_funct.1 X2) \wedge ((v1\_funct.2 X2 (u1\_struct.0 X0) \\ & (u1\_struct.0 X1)) \wedge ((v1\_group.6 X2 X0 X1) \wedge (m1\_subset.1 X2 (k1\_zfmisc.1 \\ & (k2\_zfmisc.1 (u1\_struct.0 X0) (u1\_struct.0 X1)))))) \Rightarrow ((v3\_funct.2 \\ & X2 (u1\_struct.0 X0) (u1\_struct.0 X1)) \Rightarrow ((v1\_funct.1 (k2\_funct.1 \\ & X2) \wedge ((v1\_funct.2 (k2\_funct.1 X2) (u1\_struct.0 X1) (u1\_struct.0 \\ & X0)) \wedge ((v1\_group.6 (k2\_funct.1 X2) X1 X0) \wedge (m1\_subset.1 (k2\_funct.1 \\ & X2) (k1\_zfmisc.1 (k2\_zfmisc.1 (u1\_struct.0 X1) (u1\_struct.0 X0)))))))))) \\ & \tag{1} \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct.0 X0) \wedge ((v15\_algstr.0 X0) \wedge ((v2\_group.1 \\ & X0) \wedge ((v3\_group.1 X0) \wedge (l3\_algstr.0 X0)))))) \Rightarrow (\forall X1.((v1\_funct.1 \\ & X1) \wedge ((v1\_funct.2 X1 (u1\_struct.0 X0) (u1\_struct.0 X0)) \wedge ((v1\_group.6 \\ & X1 X0 X0) \wedge (m1\_subset.1 X1 (k1\_zfmisc.1 (k2\_zfmisc.1 (u1\_struct.0 \\ & X0) (u1\_struct.0 X0)))))) \Rightarrow ((X1 \in k1\_autgroup X0) \Leftrightarrow (v3\_funct.2 \\ & X1 (u1\_struct.0 X0) (u1\_struct.0 X0)))) \\ & \tag{2} \end{aligned}$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset.1 X0 X1) \Rightarrow ((v1\_xboole.0 X1) \vee (X0 \in X1)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X1)\wedge(m1\_funct\_2 X2 X0 X1))\Rightarrow(\forall X3.(m2\_funct\_2 X3 X0 X1 X2)\Leftrightarrow(m1\_subset\_1 X3 X2)) \quad (4)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_struct\_0 X0))\Rightarrow(\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_funct\_2 X2 X0 X1)\Rightarrow(\neg v1\_xboole\_0 X2) \quad (6)$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0)\Rightarrow(l1\_struct\_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v15\_algstr\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0)))))\Rightarrow(m1\_funct\_2 (k1\_autgroup X0) (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \quad (8)$$

Assume the following.

$$\begin{aligned} &\forall X0.((\neg v2\_struct\_0 X0)\wedge((v15\_algstr\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0)))))\Rightarrow(\forall X1.(m1\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 X0))\Rightarrow((X1 = k1\_autgroup X0)\Leftrightarrow( \\ &\quad (\forall X2.(m2\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X0) X1)\Rightarrow \\ &\quad ((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X0))\wedge((v1\_group\_6 X2 X0 X0)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0))))))))\wedge(\forall X2.((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X0))\wedge((v1\_group\_6 X2 X0 X0)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0))))))))\Rightarrow((X2 \in X1)\Leftrightarrow((v2\_funct\_1 X2)\wedge(v2\_funct\_2 X2 (u1\_struct\_0 X0))))))) \end{aligned} \quad (9)$$

**Theorem 1**

$$\begin{aligned} &\forall X0.((\neg v2\_struct\_0 X0)\wedge((v15\_algstr\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0)))))\Rightarrow(\forall X1.(m2\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 X0) (k1\_autgroup X0))\Rightarrow((v1\_funct\_1 (k2\_funct\_1 X1)\wedge((v1\_funct\_2 (k2\_funct\_1 X1) (u1\_struct\_0 X0) (u1\_struct\_0 X0))\wedge((v1\_group\_6 (k2\_funct\_1 X1) X0 X0)\wedge(m1\_subset\_1 (k2\_funct\_1 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))))))) \end{aligned}$$