

# t34\_group\_5 (TMLVmZupvEdWf- fCr4WKMIh5WuPjgXeNKn9Y)

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Let  $v1\_int\_1 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_group\_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_group\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_group\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_group\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k19\_binop\_2 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ & X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\ & (v1\_int\_1 X3) \Rightarrow (k2\_group\_3 X0 (k5\_group\_1 X0 X3 X1) X2 = k5\_group\_1 \\ & X0 X3 (k2\_group\_3 X0 X1 X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ & X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((k2\_group\_5 \\ & X0 X1 X2 = k6\_algstr\_0 X0 (k2\_group\_3 X0 (k2\_group\_1 X0 X2) X1) X2) \wedge \\ & (k2\_group\_5 X0 X1 X2 = k6\_algstr\_0 X0 (k2\_group\_1 X0 X1) (k2\_group\_3 \\ & X0 X1 X2)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.(v1\_int\_1 X0) \Rightarrow (k19\_binop\_2 X0 = k4\_xcmplx\_0 X0) \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_int\_1 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 \\ & X1) \wedge ((v3\_group\_1 X1) \wedge (l3\_algstr\_0 X1)))) \Rightarrow (\forall X2.(m1\_subset\_1 \\ & X2 (u1\_struct\_0 X1)) \Rightarrow (k5\_group\_1 X1 (k19\_binop\_2 X0) X2 = k2\_group\_1 \\ & X1 (k5\_group\_1 X1 X0 X2)))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge (v2\_group\_1 \\ & X0) \wedge (v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0))) \wedge ((v1\_int\_1 X1) \wedge (m1\_subset\_1 \\ & X2 (u1\_struct\_0 X0))) \Rightarrow (m1\_subset\_1 (k5\_group\_1 X0 X1 X2) (u1\_struct\_0 \\ & X0)) \end{aligned} \tag{5}$$

**Theorem 1**

$$\begin{aligned} & \forall X0. (v1\_int\_1 X0) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge (v2\_group\_1 \\ & X1) \wedge (v3\_group\_1 X1) \wedge (l3\_algstr\_0 X1))) \Rightarrow (\forall X2. (m1\_subset\_1 \\ & X2 (u1\_struct\_0 X1)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (u1\_struct\_0 \\ & X1)) \Rightarrow (k2\_group\_5 X1 (k5\_group\_1 X1 X0 X2) X3 = k6\_algstr\_0 X1 (k5\_group\_1 \\ & X1 (k4\_xcmplx\_0 X0) X2) (k5\_group\_1 X1 X0 (k2\_group\_3 X1 X2 X3)))))) \end{aligned}$$