

t24\_funcop\_1  
(TMQjnd8LmN89bnG21xU5tomGZ5uAFbxZfVg)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k13\_funct\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 X1) \Rightarrow (\forall X2. (v1\_relat\_1 X2) \Rightarrow (k5\_relat\_1 (k3\_relat\_1 X1 X2) X0 = k3\_relat\_1 (k5\_relat\_1 X1 X0) X2)) \quad (1)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2. k5\_relat\_1 (k13\_funct\_3 X0 X1) X2 = k13\_funct\_3 X0 (k5\_relat\_1 X1 X2))) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \wedge ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1))) \Rightarrow ((v1\_relat\_1 (k13\_funct\_3 X0 X1)) \wedge (v1\_funct\_1 (k13\_funct\_3 X0 X1))) \quad (3)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2. ((v1\_relat\_1 X2) \wedge (v1\_funct\_1 X2)) \Rightarrow (k3\_funcop\_1 X0 X1 X2 = k3\_relat\_1 (k13\_funct\_3 X1 X2) X0))) \quad (4)$$

**Theorem 1**

$$\forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2. ((v1\_relat\_1 X2) \wedge (v1\_funct\_1 X2)) \Rightarrow (\forall X3. \forall X4. ((v1\_relat\_1 X4) \wedge (v1\_funct\_1 X4)) \Rightarrow ((k5\_relat\_1 X0 X3 = k5\_relat\_1 X1 X3) \Rightarrow (k5\_relat\_1 (k3\_funcop\_1 X4 X2 X0) X3 = k5\_relat\_1 (k3\_funcop\_1 X4 X2 X1) X3))))))$$