

## t16\_scmpds\_4

(TMX33vgkxs9WFoYsYCiBkAQphooF5cPc2mw)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_compos\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_scmpds\_2 : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v1\_afinsq\_1 : \iota \Rightarrow o$  be given. Let  $k1\_scmpds\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_scmpds\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_scmpds\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_compos\_1 : \iota \Rightarrow o$  be given. Let  $k9\_compos\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_afinsq\_1 : \iota \Rightarrow \iota$  be given. Let  $v5\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_compos\_0 : \iota \Rightarrow o$  be given. Let  $v2\_compos\_0 : \iota \Rightarrow o$  be given. Let  $v3\_compos\_0 : \iota \Rightarrow o$  be given. Let  $v5\_compos\_0 : \iota \Rightarrow o$  be given. Let  $l1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_2 : \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_compos\_1 k1\_scmpds\_2)) \Rightarrow (\forall X1. \\ & ((\neg v1\_xboole\_0 X1) \wedge ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 k5\_numbers) \wedge \\ & ((v5\_relat\_1 X1 (u1\_compos\_1 k1\_scmpds\_2)) \wedge ((v1\_funct\_1 X1) \wedge \\ & ((v1\_finset\_1 X1) \wedge (v1\_afinsq\_1 X1))))))) \Rightarrow (\forall X2. ((\neg v1\_xboole\_0 \\ & X2) \wedge ((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 k5\_numbers) \wedge ((v5\_relat\_1 \\ & X2 (u1\_compos\_1 k1\_scmpds\_2)) \wedge ((v1\_funct\_1 X2) \wedge ((v1\_finset\_1 \\ & X2) \wedge (v1\_afinsq\_1 X2))))))) \Rightarrow (k1\_scmpds\_4 (k2\_scmpds\_4 X0 X1) \\ & X2 = k2\_scmpds\_4 X0 (k1\_scmpds\_4 X1 X2))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. ((l1\_compos\_1 X0) \wedge (m1\_subset\_1 X1 (u1\_compos\_1 X0))) \Rightarrow (k9\_compos\_1 X0 X1 = k3\_afinsq\_1 X1) \tag{2}$$

Assume the following.

$$\forall X0. (v5\_ordinal1 (k3\_afinsq\_1 X0)) \wedge (v1\_finset\_1 (k3\_afinsq\_1 X0)) \tag{3}$$

Assume the following.

$$\forall X0. (v1\_relat\_1 (k3\_afinsq\_1 X0)) \wedge (v1\_funct\_1 (k3\_afinsq\_1 X0)) \tag{4}$$

Assume the following.

$$\forall X0. \neg v1\_xboole\_0 (k3\_afinsq\_1 X0) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge (m1\_subset\_1 X1 X0)) \Rightarrow (v5\_relat\_1 (k3\_afinsq\_1 X1) X0) \quad (6)$$

Assume the following.

$$\forall X0. (l1\_compos\_1 X0) \Rightarrow ((v1\_compos\_0 (u1\_compos\_1 X0)) \wedge ((v2\_compos\_0 (u1\_compos\_1 X0)) \wedge ((v3\_compos\_0 (u1\_compos\_1 X0)) \wedge (v5\_compos\_0 (u1\_compos\_1 X0)))))) \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. (l1\_extpro\_1 X1 X0) \Rightarrow ((l1\_memstr\_0 X1 X0) \wedge (l1\_compos\_1 X1)) \quad (8)$$

Assume the following.

$$(v1\_extpro\_1 k1\_scmpds\_2 np\_2) \wedge (l1\_extpro\_1 k1\_scmpds\_2 np\_2) \quad (9)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 X0 (u1\_compos\_1 k1\_scmpds\_2)) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_compos\_1 k1\_scmpds\_2)) \Rightarrow (k4\_scmpds\_4 X0 X1 = k1\_scmpds\_4 (k9\_compos\_1 k1\_scmpds\_2 X0) (k9\_compos\_1 k1\_scmpds\_2 X1))) \quad (10)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 X0 (u1\_compos\_1 k1\_scmpds\_2)) \Rightarrow (\forall X1. ((\neg v1\_xboole\_0 X1) \wedge ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 k5\_numbers) \wedge ((v5\_relat\_1 X1 (u1\_compos\_1 k1\_scmpds\_2)) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_finset\_1 X1) \wedge (v1\_afinsq\_1 X1))))))) \Rightarrow (k2\_scmpds\_4 X0 X1 = k1\_scmpds\_4 (k9\_compos\_1 k1\_scmpds\_2 X0) X1)) \quad (11)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge ((v5\_ordinal1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finset\_1 X0)))) \Rightarrow ((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v5\_ordinal1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finset\_1 X0))))) \quad (12)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge ((v5\_ordinal1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finset\_1 X0)))) \Rightarrow ((v1\_relat\_1 X0) \wedge ((v5\_ordinal1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_afinsq\_1 X0))))) \quad (13)$$

Assume the following.

$$\forall X0. (v5\_compos\_0 X0) \Rightarrow (\neg v1\_xboole\_0 X0) \quad (14)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_compos\_1 k1\_scmpds\_2)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_compos\_1 k1\_scmpds\_2)) \Rightarrow (\forall X2. ((\neg v1\_xboole\_0 \\ & X2) \wedge ((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 k5\_numbers) \wedge ((v5\_relat\_1 \\ & X2 (u1\_compos\_1 k1\_scmpds\_2)) \wedge ((v1\_funct\_1 X2) \wedge ((v1\_finset\_1 \\ & X2) \wedge (v1\_afinsq\_1 X2))))))) \Rightarrow (k1\_scmpds\_4 (k4\_scmpds\_4 X0 X1) \\ & X2 = k2\_scmpds\_4 X0 (k2\_scmpds\_4 X1 X2)))) \end{aligned}$$