

# t1\_scm\_1 (TMKwKKTHNqJLXXyfWki- WFhe5roGm5G6EU3S)

October 27, 2020

Let  $v1\_int\_1 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v5\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_2 : \iota$  be given. Let  $k1\_ami\_3 : \iota$  be given. Let  $m1\_scm\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k16\_afinsq\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_ami\_3 : \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $np\_3 : \iota$  be given. Let  $k1\_afinsq\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_4 : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_0 : \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_numbers : \iota$  be given. Let  $v5\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v5\_funct\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(k1\_funct\_1 (k16\_afinsq\_1 \\ & X0 X1 X2 X3) k6\_numbers = X0) \wedge ((k1\_funct\_1 (k16\_afinsq\_1 X0 X1 X2 \\ & X3) np\_1 = X1) \wedge ((k1\_funct\_1 (k16\_afinsq\_1 X0 X1 X2 X3) np\_2 = X2) \wedge \\ & (k1\_funct\_1 (k16\_afinsq\_1 X0 X1 X2 X3) np\_3 = X3))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.k1\_afinsq\_1 (k16\_afinsq\_1 X0 X1 X2 X3) = np\_4 \quad (2)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (3)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 np\_3) \wedge (m2\_subset\_1 np\_3 k1\_numbers k5\_numbers)) \wedge \\ & ((m1\_subset\_1 np\_3 k5\_numbers) \wedge (m1\_subset\_1 np\_3 k1\_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \text{ } np\_2) \wedge (m2\_subset\_1 \text{ } np\_2 \text{ } k1\_numbers \text{ } k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \text{ } np\_2 \text{ } k5\_numbers) \wedge (m1\_subset\_1 \text{ } np\_2 \text{ } k1\_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \text{ } np\_1) \wedge (m2\_subset\_1 \text{ } np\_1 \text{ } k1\_numbers \text{ } k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \text{ } np\_1 \text{ } k5\_numbers) \wedge (m1\_subset\_1 \text{ } np\_1 \text{ } k1\_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & (m2\_subset\_1 \text{ } np\_0 \text{ } k1\_numbers \text{ } k5\_numbers) \wedge ((m1\_subset\_1 \text{ } np\_0 \\ & \text{ } k5\_numbers) \wedge (m1\_subset\_1 \text{ } np\_0 \text{ } k1\_numbers)) \end{aligned} \quad (7)$$

Assume the following.

$$v1\_xboole\_0 \text{ } np\_0 \quad (8)$$

Assume the following.

$$\neg r1\_xxreal\_0 \text{ } np\_4 \text{ } np\_3 \quad (9)$$

Assume the following.

$$\neg r1\_xxreal\_0 \text{ } np\_4 \text{ } np\_2 \quad (10)$$

Assume the following.

$$\neg r1\_xxreal\_0 \text{ } np\_4 \text{ } np\_1 \quad (11)$$

Assume the following.

$$\neg r1\_xxreal\_0 \text{ } np\_4 \text{ } np\_0 \quad (12)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v1\_int\_1 \text{ } X0) \wedge \\ & (v1\_int\_1 \text{ } X1) \wedge ((v1\_int\_1 \text{ } X2) \wedge (v1\_int\_1 \text{ } X3))) \Rightarrow (v5\_relat\_1 ( \\ & \text{ } k16\_afinsq\_1 \text{ } X0 \text{ } X1 \text{ } X2 \text{ } X3) \text{ } k4\_numbers) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (v5\_ordinal1 (k16\_afinsq\_1 \\ & \text{ } X0 \text{ } X1 \text{ } X2 \text{ } X3)) \wedge (v1\_finset\_1 (k16\_afinsq\_1 \text{ } X0 \text{ } X1 \text{ } X2 \text{ } X3)) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (v1\_relat\_1 (k16\_afinsq\_1 \\ & \text{ } X0 \text{ } X1 \text{ } X2 \text{ } X3)) \wedge (v1\_funct\_1 (k16\_afinsq\_1 \text{ } X0 \text{ } X1 \text{ } X2 \text{ } X3)) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v5\_relat\_1 X0 k4\_numbers) \wedge ((v1\_funct\_1 \\ X0) \wedge ((v5\_ordinal1 X0) \wedge (v1\_finset\_1 X0)))))) \Rightarrow (\forall X1.(m1\_scm\_1 \\ X1 X0) \Rightarrow ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 (u1\_struct\_0 k1\_ami\_3)) \wedge \\ ((v1\_funct\_1 X1) \wedge ((v5\_funct\_1 X1 (k2\_memstr\_0 np\_2 k1\_ami\_3)) \wedge \\ (v1\_partfun1 X1 (u1\_struct\_0 k1\_ami\_3))))))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v5\_relat\_1 X0 k4\_numbers) \wedge ((v1\_funct\_1 \\ X0) \wedge ((v5\_ordinal1 X0) \wedge (v1\_finset\_1 X0)))))) \Rightarrow (\forall X1.((v1\_relat\_1 \\ X1) \wedge ((v4\_relat\_1 X1 (u1\_struct\_0 k1\_ami\_3)) \wedge ((v1\_funct\_1 X1) \wedge \\ ((v5\_funct\_1 X1 (k2\_memstr\_0 np\_2 k1\_ami\_3)) \wedge (v1\_partfun1 X1 \\ (u1\_struct\_0 k1\_ami\_3))))))) \Rightarrow ((m1\_scm\_1 X1 X0) \Leftrightarrow (\forall X2.( \\ m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow ((\neg r1\_xreal\_0 (k1\_afinsq\_1 \\ X0) X2) \Rightarrow (k1\_funct\_1 X1 (k10\_ami\_3 X2) = k1\_funct\_1 X0 X2)))))) \end{aligned} \quad (18)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(v1\_int\_1 X0) \Rightarrow (\forall X1.(v1\_int\_1 X1) \Rightarrow (\forall X2. \\ (v1\_int\_1 X2) \Rightarrow (\forall X3.(v1\_int\_1 X3) \Rightarrow (\forall X4.(m2\_subset\_1 \\ X4 k1\_numbers k5\_numbers) \Rightarrow (\forall X5.((v5\_memstr\_0 X5 np\_2 \\ k1\_ami\_3 X4) \wedge (m1\_scm\_1 X5 (k16\_afinsq\_1 X0 X1 X2 X3)) \Rightarrow ((k1\_funct\_1 \\ X5 (k10\_ami\_3 k6\_numbers) = X0) \wedge ((k1\_funct\_1 X5 (k10\_ami\_3 np\_1) = \\ X1) \wedge ((k1\_funct\_1 X5 (k10\_ami\_3 np\_2) = X2) \wedge (k1\_funct\_1 X5 (k10\_ami\_3 \\ np\_3) = X3)))))))))) \end{aligned}$$