

t41\_supinf\_2 (TMY-  
wYHfe3GpzwLhSTF2DBRUcCM5cH3zHdQF)

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Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k7\_numbers : \iota$  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  $v6\_supinf\_2 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k12\_supinf\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k18\_supinf\_2 : \iota \Rightarrow \iota$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v4\_card\_3 : \iota \Rightarrow o$  be given. Let  $v5\_supinf\_2 : \iota \Rightarrow o$  be given. Let  $m1\_supinf\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k15\_supinf\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k17\_supinf\_2 : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v4\_card\_3 X0) \wedge ((v5\_supinf\_2 \\ & \quad X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 k7\_numbers)))))) \Rightarrow (\forall X1. \\ (m1\_supinf\_2 X1 X0) \Rightarrow (\forall X2.(m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow \\ & \quad (\forall X3.(m2\_subset\_1 X3 k1\_numbers k5\_numbers) \Rightarrow (r1\_xxreal\_0 \\ & \quad (k12\_supinf\_2 (k15\_supinf\_2 X0 X1) X2) (k12\_supinf\_2 (k15\_supinf\_2 \\ & \quad \quad X0 X1) (k2\_nat\_1 X2 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1\_funct\_1 X2) \wedge \\ & ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & \quad X0 X1)))))) \wedge ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X0 X1) \wedge (m1\_subset\_1 \\ & \quad X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow ((r2\_funct\_2 X0 X1 X2 \\ & \quad X3) \Leftrightarrow (X2 = X3)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k7\_numbers) \wedge \\ & (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k7\_numbers)))))) \Rightarrow \\ & \quad (k17\_supinf\_2 X0 = k10\_xtuple\_0 X0) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v4\_card\_3 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 k7\_numbers)))) \Rightarrow (\exists X1.m1\_supinf\_2 X1 X0) \quad (4)$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v4\_card\_3 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 k7\_numbers)))) \Rightarrow (\forall X1.(m1\_supinf\_2 X1 X0) \Rightarrow ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers k7\_numbers) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k7\_numbers)))))) \quad (5)$$

Assume the following.

$$\forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k7\_numbers) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k7\_numbers)))) \Rightarrow ((v1\_funct\_1 (k18\_supinf\_2 X0)) \wedge ((v1\_funct\_2 (k18\_supinf\_2 X0) k5\_numbers k7\_numbers) \wedge (m1\_subset\_1 (k18\_supinf\_2 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k7\_numbers)))))) \quad (6)$$

Assume the following.

$$\forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k7\_numbers) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k7\_numbers)))) \Rightarrow ((\neg v1\_xboole\_0 (k17\_supinf\_2 X0)) \wedge ((v4\_card\_3 (k17\_supinf\_2 X0)) \wedge (m1\_subset\_1 (k17\_supinf\_2 X0) (k1\_zfmisc\_1 k7\_numbers)))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v1\_xboole\_0 X0) \wedge ((v4\_card\_3 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 k7\_numbers)))) \wedge (m1\_supinf\_2 X1 X0)) \Rightarrow ((v1\_funct\_1 (k15\_supinf\_2 X0 X1)) \wedge ((v1\_funct\_2 (k15\_supinf\_2 X0 X1) k5\_numbers k7\_numbers) \wedge (m1\_subset\_1 (k15\_supinf\_2 X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k7\_numbers)))))) \quad (8)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow ((v6\_supinf\_2 X0) \Leftrightarrow (v5\_supinf\_2 (k10\_xtuple\_0 X0))) \quad (9)$$

Assume the following.

$$\forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k7\_numbers) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k7\_numbers)))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers k7\_numbers) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k7\_numbers)))) \Rightarrow ((X1 = k18\_supinf\_2 X0) \Leftrightarrow (\forall X2.(m1\_supinf\_2 X2 (k17\_supinf\_2 X0)) \Rightarrow ((r2\_funct\_2 k5\_numbers k7\_numbers X2 X0) \Rightarrow (r2\_funct\_2 k5\_numbers k7\_numbers X1 (k15\_supinf\_2 (k17\_supinf\_2 X0) X2)))))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v1\_relat\_1 X2) \quad (11)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v1\_funct\_1 X0)\wedge((v1\_funct\_2 X0 k5\_numbers k7\_numbers)\wedge \\ & (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k7\_numbers))))))\Rightarrow \\ & ((v6\_supinf\_2 X0)\Rightarrow(\forall X1.(m2\_subset\_1 X1 k1\_numbers k5\_numbers)\Rightarrow \\ & (\forall X2.(m2\_subset\_1 X2 k1\_numbers k5\_numbers)\Rightarrow(r1\_xxreal\_0 \\ & (k12\_supinf\_2 (k18\_supinf\_2 X0) X1) (k12\_supinf\_2 (k18\_supinf\_2 \\ & X0) (k2\_nat\_1 X1 X2)))))) \end{aligned}$$