

t60\_matrprob  
(TMS57huz5j4hTbzm2b2zffKhsvjQ8mokF5Q)

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Let  $v3\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_matrix\_1 : \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_finseq\_2 : \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v6\_matrprob : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k8\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_matrprob : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v3\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_matrprob : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_matrix\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k4\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_card\_1 : \iota \Rightarrow o$  be given. Let  $m1\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v5\_matrprob : \iota \Rightarrow o$  be given. Let  $k18\_rvsum\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $v2\_matrprob : \iota \Rightarrow o$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $v2\_membered : \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow ((r1\_xxreal\_0 X0 X1) \Rightarrow ((v1\_xboole\_0 X0) \vee ((v2\_xxreal\_0 X1) \vee (v3\_xxreal\_0 X0)))))) \quad (1)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((\neg v3\_relat\_1 X1) \wedge \\ ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 X0)))) \Rightarrow ((r1\_xxreal\_0 \\ np\_1 (k3\_finseq\_1 X1)) \wedge (r1\_xxreal\_0 np\_1 (k1\_matrix\_1 X1)))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (5)$$

Assume the following.

$$m1\_subset\_1 k1\_xboole\_0 k4\_ordinal1 \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_matrix\_1 X1) \wedge \\ (m2\_finseq\_1 X1 (k3\_finseq\_2 X0))) \Rightarrow (\forall X2.(v7\_ordinal1 \\ X2) \Rightarrow ((X2 \in k4\_finseq\_1 X1) \Rightarrow (k1\_funct\_1 X1 X2 = k8\_matrix\_1 X0 X1 \\ X2)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} ((v2\_xxreal\_0 np\_1) \wedge (m2\_subset\_1 np\_1 k1\_numbers k5\_numbers)) \wedge \\ ((m1\_subset\_1 np\_1 k5\_numbers) \wedge (m1\_subset\_1 np\_1 k1\_numbers)) \end{aligned} \quad (8)$$

Assume the following.

$$\neg v1\_xboole\_0 np\_1 \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0) \wedge (((v1\_matrix\_1 \\ X1) \wedge (m1\_finseq\_1 X1 (k3\_finseq\_2 X0))) \wedge (v7\_ordinal1 X2))) \Rightarrow ( \\ k8\_matrix\_1 X0 X1 X2 = k6\_matrix\_1 X0 X1 X2) \end{aligned} \quad (11)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (12)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (13)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow (k3\_finseq\_1 X0 = k1\_card\_1 X0) \quad (14)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((m1\_finseq\_1 X1 (k3\_finseq\_2 X0)) \wedge (v7\_ordinal1 X2)) \Rightarrow (k1\_matrprob X0 X1 X2 = k1\_funct\_1 X1 X2) \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0. (m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1. ((v1\_matrix\_1 X1) \wedge (m2\_finseq\_1 X1 (k3\_finseq\_2 k1\_numbers))) \Rightarrow (\forall X2. \\ (m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow (\forall X3. (m2\_subset\_1 X3 k1\_numbers k5\_numbers) \Rightarrow ((k4\_tarski X2 X3 \in k2\_matrix\_1 X1) \Rightarrow \\ (r1\_xreal\_0 X0 (k3\_matrix\_1 k1\_numbers X1 X2 X3)))) \Leftrightarrow (\forall X2. \\ (m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow (\forall X3. (m2\_subset\_1 X3 k1\_numbers k5\_numbers) \Rightarrow ((X2 \in k4\_finseq\_1 X1) \wedge (X3 \in k4\_finseq\_1 \\ (k8\_matrix\_1 k1\_numbers X1 X2))) \Rightarrow (r1\_xreal\_0 X0 (k1\_seq\_1 (k8\_matrix\_1 \\ k1\_numbers X1 X2) X3)))))) \end{aligned} \quad (16)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1) \wedge (v3\_ordinal1 k4\_ordinal1) \quad (17)$$

Assume the following.

$$\forall X0. \forall X1. ((v7\_ordinal1 X0) \wedge (\neg v1\_xboole\_0 X1)) \Rightarrow (\neg v1\_xboole\_0 (k4\_finseq\_2 X0 X1)) \quad (18)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (19)$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Rightarrow ((v1\_xboole\_0 (k1\_card\_1 X0)) \wedge (v1\_card\_1 (k1\_card\_1 X0))) \quad (20)$$

Assume the following.

$$\forall X0. \exists X1. m1\_subset\_1 X1 X0 \quad (21)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_finseq\_2 X1 X0) \Rightarrow (\forall X2. (m2\_finseq\_2 X2 X0 X1) \Rightarrow (m2\_finseq\_1 X2 X0)) \quad (22)$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 X1 X0) \Rightarrow ((v1\_funct\_1 X1) \wedge ((v1\_finseq\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers X0)))))) \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge(((v1\_matrix\_1 X1)\wedge(m1\_finseq\_1 X1 (k3\_finseq\_2 X0))\wedge(v7\_ordinal1 X2))))\Rightarrow(m2\_finseq\_1 (k6\_matrix\_1 X0 X1 X2) X0) \quad (24)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (25)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 X0)))\Rightarrow(m1\_subset\_1 (k4\_finseq\_1 X0) (k1\_zfmisc\_1 k5\_numbers)) \quad (26)$$

Assume the following.

$$\forall X0.m1\_finseq\_2 (k3\_finseq\_2 X0) X0 \quad (27)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 X0)))\Rightarrow(m2\_subset\_1 (k3\_finseq\_1 X0) k1\_numbers k5\_numbers) \quad (28)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_finseq\_1 X1 (k3\_finseq\_2 X0))\wedge(v7\_ordinal1 X2))\Rightarrow(m2\_finseq\_1 (k1\_matrprob X0 X1 X2) X0) \quad (29)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((v1\_finseq\_1 X0)\wedge(v1\_matrix\_1 X0))))\Rightarrow(m1\_subset\_1 (k1\_matrix\_1 X0) k5\_numbers) \quad (30)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_matrix\_1 X0)\wedge(m2\_finseq\_1 X0 (k3\_finseq\_2 k1\_numbers)))\Rightarrow \\ ((v5\_matrprob X0)\Leftrightarrow(\forall X1.(m2\_subset\_1 X1 k1\_numbers k5\_numbers)\Rightarrow \\ ((X1 \in k4\_finseq\_1 X0)\Rightarrow(k18\_rvsum\_1 (k1\_matrprob k1\_numbers X0 \\ X1) = np\_1)))) \end{aligned} \quad (31)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.((v1\_matrix\_1 X1)\wedge \\ (m2\_finseq\_1 X1 (k3\_finseq\_2 X0)))\Rightarrow(\forall X2.(v7\_ordinal1 \\ X2)\Rightarrow(\forall X3.(m2\_finseq\_1 X3 X0)\Rightarrow((X3 = k6\_matrix\_1 X0 X1 X2)\Leftrightarrow \\ ((k3\_finseq\_1 X3 = k1\_matrix\_1 X1)\wedge(\forall X4.(v7\_ordinal1 X4)\Rightarrow \\ ((X4 \in k2\_finseq\_1 (k1\_matrix\_1 X1))\Rightarrow(k1\_funct\_1 X3 X4 = k3\_matrix\_1 \\ X0 X1 X2 X4)))))))) \end{aligned} \quad (32)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_matrix\_1 X0) \wedge (m2\_finseq\_1 X0 (k3\_finseq\_2 k1\_numbers))) \Rightarrow \\ & ((v2\_matrprob X0) \Leftrightarrow (\forall X1.(m2\_subset\_1 X1 k1\_numbers k5\_numbers) \Rightarrow \\ & (\forall X2.(m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow ((k4\_tarski \\ & X1 X2 \in k2\_matrix\_1 X0) \Rightarrow (r1\_xxreal\_0 k6\_numbers (k3\_matrix\_1 k1\_numbers \\ & X0 X1 X2)))))) \end{aligned} \quad (33)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m2\_finseq\_1 X0 k1\_numbers) \Rightarrow ((v1\_matrprob X0) \Leftrightarrow (( \\ & \forall X1.(m2\_subset\_1 X1 k1\_numbers k5\_numbers) \Rightarrow ((X1 \in k4\_finseq\_1 \\ & X0) \Rightarrow (r1\_xxreal\_0 k6\_numbers (k1\_seq\_1 X0 X1)))) \wedge (k18\_rvsum\_1 \\ & X0 = np\_1))) \end{aligned} \quad (34)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.k4\_finseq\_2 X0 X1 = ReplSep \\ & (toset (\lambda X2 : \iota.m2\_finseq\_2 X2 X1 (k3\_finseq\_2 X1))) (\lambda X2 : \\ & \iota.k3\_finseq\_1 X2 = X0) (\lambda X2 : \iota.X2)) \end{aligned} \quad (35)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (36)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers)) \Rightarrow (v3\_membered X0) \quad (37)$$

Assume the following.

$$\forall X0.(v3\_membered X0) \Rightarrow (v2\_membered X0) \quad (38)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_finseq\_1 X0 (k3\_finseq\_2 k1\_numbers)) \Rightarrow (((v1\_matrix\_1 \\ & X0) \wedge ((v2\_matrprob X0) \wedge (v5\_matrprob X0))) \Rightarrow ((v1\_matrix\_1 X0) \wedge \\ & (v6\_matrprob X0))) \end{aligned} \quad (39)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_xxreal\_0 X0) \wedge (v2\_xxreal\_0 X0)) \Rightarrow (((\neg v1\_xboole\_0 \\ & X0) \wedge ((v1\_xxreal\_0 X0) \wedge (\neg v3\_xxreal\_0 X0))) \end{aligned} \quad (40)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_finseq\_1 X0 (k3\_finseq\_2 k1\_numbers)) \Rightarrow (((v1\_matrix\_1 \\ & X0) \wedge (v6\_matrprob X0)) \Rightarrow ((v1\_matrix\_1 X0) \wedge ((v2\_matrprob X0) \wedge \\ & (v5\_matrprob X0)))) \end{aligned} \quad (41)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\neg v3\_xreal\_0 X0) \quad (42)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \quad (43)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v1\_xboole\_0 X0)) \Rightarrow ((v1\_relat\_1 X0) \wedge (v1\_finseq\_1 X0)) \quad (44)$$

Assume the following.

$$\forall X0.(v3\_membered X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 X0) \Rightarrow (v1\_xreal\_0 X1)) \quad (45)$$

Assume the following.

$$\forall X0.(v2\_membered X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 X0) \Rightarrow (v1\_xreal\_0 X1)) \quad (46)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v3\_relat\_1 X0) \wedge ((v1\_matrix\_1 X0) \wedge (m2\_finseq\_1 \\ & X0 (k3\_finseq\_2 k1\_numbers)))) \Rightarrow (((\neg v3\_relat\_1 X0) \wedge ((v1\_matrix\_1 \\ & X0) \wedge ((v6\_matrprob X0) \wedge (m2\_finseq\_1 X0 (k3\_finseq\_2 k1\_numbers)))))) \Leftrightarrow \\ & (\forall X1.(m2\_subset\_1 X1 k1\_numbers k5\_numbers) \Rightarrow ((X1 \in k4\_finseq\_1 \\ & X0) \Rightarrow ((\neg v1\_xboole\_0 (k8\_matrix\_1 k1\_numbers X0 X1)) \wedge ((v1\_matrprob \\ & (k8\_matrix\_1 k1\_numbers X0 X1)) \wedge (m2\_finseq\_1 (k8\_matrix\_1 k1\_numbers \\ & X0 X1) k1\_numbers)))))) \end{aligned}$$