

t31\_mssubfam  
(TMbrSedd4z26j1E58farftsQnRKL2vPyfwh)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k1\_pboole : \iota \Rightarrow \iota$  be given. Let  $v2\_finset\_1 : \iota \Rightarrow o$  be given. Let  $m3\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_mboolean : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 X0) \wedge (v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 X0))) \Rightarrow (r2\_pboole X0 (k1\_pboole X0) X1) \quad (1)$$

Assume the following.

$$\forall X0. (v1\_relat\_1 (k1\_pboole X0) \wedge ((v3\_relat\_1 (k1\_pboole X0) \wedge ((v4\_relat\_1 (k1\_pboole X0) X0) \wedge ((v1\_funct\_1 (k1\_pboole X0) \wedge (v1\_partfun1 (k1\_pboole X0) X0) \wedge (v2\_finset\_1 (k1\_pboole X0))))))) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 X0) \wedge (v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 X0))) \Rightarrow ((v1\_relat\_1 (k1\_mboolean X0 X1) \wedge ((v4\_relat\_1 (k1\_mboolean X0 X1) X0) \wedge ((v1\_funct\_1 (k1\_mboolean X0 X1) \wedge (v1\_partfun1 (k1\_mboolean X0 X1) X0)))))) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 X0) \wedge (v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 X0))) \Rightarrow (\forall X2. ((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 X0) \wedge (v1\_funct\_1 X2) \wedge (v1\_partfun1 X2 X0)))) \Rightarrow ((m3\_pboole X2 X0 X1) \Leftrightarrow (r2\_pboole X0 X2 X1)) \quad (4)$$

**Theorem 1**

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge((v4\_relat\_1 X1 X0)\wedge(v1\_funct\_1 X1)\wedge(v1\_partfun1 X1 X0)))\Rightarrow((v3\_relat\_1 (k1\_pboole X0))\wedge((v2\_finset\_1 (k1\_pboole X0))\wedge(m3\_pboole (k1\_pboole X0) X0 (k1\_mboolean X0 X1))))$$