t27_mssubfam (TMM3K12BEoJqaZULpUFFJ1yQNQoqi6dmxeM)

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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 $v2\_finset\_1 : \iota \Rightarrow o$ be given. Let $r2\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge(v1\_partfun1\ X1\ X0))))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge(v1\_partfun1\ X2\ X0))))\Rightarrow(\forall X3.((v1\_relat\_1\ X3)\wedge((v4\_relat\_1\ X3\ X0)\wedge((v1\_funct\_1\ X3)\wedge(v1\_partfun1\ X3\ X0))))\Rightarrow((r2\_pboole\ X0\ X1\ X2)\Rightarrow((r2\_pboole\ X0\ (k6\_pboole\ X0\ X1\ X3)\ (k6\_pboole\ X0\ X2\ X3))\wedge(r2\_pboole\ X0\ (k6\_pboole\ X0\ X3\ X1)\ (k6\_pboole\ X0\ X3\ X2))))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge(v1\_partfun1\ X1\ X0))))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge(v1\_partfun1\ X2\ X0))))\Rightarrow(\forall X3.((v1\_relat\_1\ X3)\wedge((v4\_relat\_1\ X3\ X0)\wedge((v1\_funct\_1\ X3)\wedge(v1\_partfun1\ X3\ X0))))\Rightarrow(\neg(v2\_finset\_1\ X1)\wedge((r2\_pboole\ X0\ X1\ (k6\_pboole\ X0\ X2\ X3))\wedge(\forall X4.((v1\_relat\_1\ X4)\wedge((v4\_relat\_1\ X4\ X0)\wedge((v1\_funct\_1\ X4)\wedge(v1\_partfun1\ X4\ X0))))\Rightarrow(\forall X5.((v1\_relat\_1\ X5)\wedge((v4\_relat\_1\ X5\ X0)\wedge((v1\_funct\_1\ X5)\wedge(v1\_partfun1\ X5\ X0))))\Rightarrow(\neg(v2\_finset\_1\ X4)\wedge((r2\_pboole\ X0\ X4\ X2)\wedge((v2\_finset\_1\ X5)\wedge((r2\_pboole\ X0\ X5\ X3)\wedge(r2\_pboole\ X0\ X1\ (k6\_pboole\ X0\ X4\ X5))))))))))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge(v1\_partfun1\ X1\ X0))))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge(v1\_partfun1\ X2\ X0))))\Rightarrow(\forall X3.((v1\_relat\_1\ X3)\wedge((v4\_relat\_1\ X3\ X0)\wedge((v1\_funct\_1\ X3)\wedge(v1\_partfun1\ X3\ X0))))\Rightarrow(((r2\_pboole\ X0\ X1\ X2)\wedge(r2\_pboole\ X0\ X2\ X3))\Rightarrow(r2\_pboole\ X0\ X1\ X3)))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge(v1\_partfun1\ X1\ X0))))\wedge((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge(v1\_partfun1\ X2\ X0)))))\Rightarrow((v1\_relat\_1\ (k6\_pboole\ X0\ X1\ X2))\wedge((v4\_relat\_1\ (k6\_pboole\ X0\ X1\ X2)\ X0)\wedge((v1\_funct\_1\ (k6\_pboole\ X0\ X1\ X2))\wedge(v1\_partfun1\ (k6\_pboole\ X0\ X1\ X2)\ X0))))) \tag{4}$$

Theorem 1

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge(v1\_partfun1\ X1\ X0))))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge(v1\_partfun1\ X2\ X0))))\Rightarrow(\forall X3.((v1\_relat\_1\ X3)\wedge((v4\_relat\_1\ X3\ X0)\wedge((v1\_funct\_1\ X3)\wedge(v1\_partfun1\ X3\ X0))))\Rightarrow(\neg(v2\_finset\_1\ X1)\wedge((r2\_pboole\ X0\ X1\ (k6\_pboole\ X0\ X2\ X3))\wedge(\forall X4.((v1\_relat\_1\ X4)\wedge((v4\_relat\_1\ X4\ X0)\wedge((v1\_funct\_1\ X4)\wedge(v1\_partfun1\ X4\ X0))))\Rightarrow(\neg(v2\_finset\_1\ X4)\wedge((r2\_pboole\ X0\ X4\ X2)\wedge(r2\_pboole\ X0\ X1\ (k6\_pboole\ X0\ X4\ X3)))))))))$$