t56_pdiff_9 (TMG8UJ48yox7y9k2Kwz4iaeC4Dj2BQd6ubM)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ 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 $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_euclid : \iota \Rightarrow \iota$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np\_\_1 : \iota$ be given. Let $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2\_pdiff\_9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_pdiff\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_pdiff\_9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_pdiff\_9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $k4\_ordinal1 : \iota$ be given. Let $k1\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3\_ordinal1 : \iota \Rightarrow o$ be given. Let $k8\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v7\_ordinal1 : \iota \Rightarrow o$ be given. Let $k1\_pdiff\_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0) \wedge (m2\_subset\_1\ X0\ k1\_numbers\ k5\_numbers)) \Rightarrow (\forall X1.\forall X2.((v1\_funct\_1\ X2) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ k1\_numbers)))) \Rightarrow (\forall X3.((v1\_funct\_1\ X3) \wedge (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ (k1\_euclid\ np\_\_1))))) \Rightarrow ((r2\_relset\_1\ (k1\_euclid\ X0)\ (k1\_euclid\ np\_\_1)\ (k3\_pdiff\_1\ X0\ X2)\ X3) \Rightarrow (((r1\_tarski\ X1\ (k1\_relset\_1\ (k1\_euclid\ X0)\ X2)) \wedge (r2\_pdiff\_9\ X1\ X0\ X2)) \Leftrightarrow (r1\_pdiff\_6\ X1\ np\_\_1\ X0\ X3))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X2))) \Rightarrow (m1\_subset\_1\ X0\ X2) \tag{2}$$

Assume the following.

$$\forall X0.(m2\_subset\_1\ X0\ k1\_numbers\ k5\_numbers)\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ k1\_numbers))))\Rightarrow(k1\_relset\_1\ (k1\_euclid\ X0)\ (k3\_pdiff\_1\ X0\ X1) = k1\_relset\_1\ (k1\_euclid\ X0)\ X1)) \tag{3}$$

Assume the following.

$$((v2\_xxreal\_0\ np\_\_1)\wedge(m2\_subset\_1\ np\_\_1\ k1\_numbers\ k5\_numbers))\wedge((m1\_subset\_1\ np\_\_1\ k5\_numbers)\wedge(m1\_subset\_1\ np\_\_1\ k1\_numbers)) \tag{4}$$

Assume the following.

$$\neg v1\_xboole\_0\ np\_\_1 \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))\Rightarrow((r2\_relset\_1\ X0\ X1\ X2\ X3)\Leftrightarrow(X2 = X3)) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))))\Rightarrow(\forall X2.(m2\_subset\_1\ X2\ X0\ X1)\Leftrightarrow(m1\_subset\_1\ X2\ X1)) \tag{7}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.(((v1\_funct\_1\ X4)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))\wedge((v1\_funct\_1\ X5)\wedge(m1\_subset\_1\ X5\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X2\ X3)))))\Rightarrow(k1\_partfun1\ X0\ X1\ X2\ X3\ X4\ X5 = k3\_relat\_1\ X4\ X5) \tag{9}$$

Assume the following.

$$(\neg v1\_xboole\_0\ k4\_ordinal1)\wedge(v3\_ordinal1\ k4\_ordinal1) \tag{10}$$

Assume the following.

$$\neg v1\_xboole\_0\ k1\_numbers \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1\_xboole\_0\ X0)\wedge(m1\_subset\_1\ X0\ k5\_numbers))\wedge(((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ k5\_numbers))\wedge(((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ (k1\_euclid\ X1)))))\wedge(m1\_subset\_1\ X3\ (k1\_euclid\ X0)))))\Rightarrow((v1\_funct\_1\ (k8\_pdiff\_1\ X0\ X1\ X2\ X3))\wedge((v1\_funct\_2\ (k8\_pdiff\_1\ X0\ X1\ X2\ X3)\ (k1\_euclid\ X0)\ (k1\_euclid\ X1))\wedge(m1\_subset\_1\ (k8\_pdiff\_1\ X0\ X1\ X2\ X3)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ (k1\_euclid\ X1))))))) \tag{12}$$

Assume the following.

$$m1\_subset\_1\ k5\_numbers\ (k1\_zfmisc\_1\ k1\_numbers) \tag{13}$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1\ X0)\wedge((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ k1\_numbers)))))\Rightarrow((v1\_funct\_1\ (k3\_pdiff\_1\ X0\ X1))\wedge(m1\_subset\_1\ (k3\_pdiff\_1\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ (k1\_euclid\ np\_\_1))))) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v1\_xboole\_0\ X0)\wedge(m1\_subset\_1\ X0\ k5\_numbers))\wedge((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ k1\_numbers)))))\Rightarrow((v1\_funct\_1\ (k2\_pdiff\_9\ X0\ X1\ X2))\wedge(m1\_subset\_1\ (k2\_pdiff\_9\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ (k9\_funct\_2\ (k1\_euclid\ X0)\ k1\_numbers))))) \tag{15}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1\_xboole\_0\ X0)\wedge(m1\_subset\_1\ X0\ k5\_numbers))\wedge(((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ k5\_numbers))\wedge((v1\_funct\_1\ X3)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ (k1\_euclid\ X1)))))))\Rightarrow((v1\_funct\_1\ (k1\_pdiff\_9\ X0\ X1\ X2\ X3))\wedge(m1\_subset\_1\ (k1\_pdiff\_9\ X0\ X1\ X2\ X3)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ (k9\_funct\_2\ (k1\_euclid\ X0)\ (k1\_euclid\ X1)))))) \tag{16}$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1\ X0)\wedge(v7\_ordinal1\ X1))\Rightarrow((v1\_funct\_1\ (k1\_pdiff\_1\ X0\ X1))\wedge((v1\_funct\_2\ (k1\_pdiff\_1\ X0\ X1)\ (k1\_euclid\ X1)\ k1\_numbers)\wedge(m1\_subset\_1\ (k1\_pdiff\_1\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X1)\ k1\_numbers))))) \tag{17}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge(m2\_subset\_1\ X0\ k1\_numbers\ k5\_numbers))\Rightarrow (\forall X1.\forall X2.((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ k1\_numbers))))\Rightarrow((r1\_tarski\ X1\ (k1\_relset\_1\ (k1\_euclid\ X0)\ X2))\Rightarrow(\forall X3.((v1\_funct\_1\ X3)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ (k9\_funct\_2\ (k1\_euclid\ X0)\ k1\_numbers)))))\Rightarrow((X3 = k2\_pdiff\_9\ X0\ X1\ X2)\Leftrightarrow((k1\_relset\_1\ (k1\_euclid\ X0)\ X3 = X1)\wedge(\forall X4.(m2\_finseq\_2\ X4\ k1\_numbers\ (k1\_euclid\ X0))\Rightarrow((X4 \in X1)\Rightarrow(k7\_partfun1\ (k9\_funct\_2\ (k1\_euclid\ X0)\ k1\_numbers)\ X3\ X4 = k1\_pdiff\_7\ X0\ X2\ X4)))))))) \tag{18}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge(m1\_subset\_1\ X0\ k5\_numbers))\Rightarrow (\forall X1.((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ k1\_numbers))))\Rightarrow(\forall X2.(m2\_finseq\_2\ X2\ k1\_numbers\ (k1\_euclid\ X0))\Rightarrow(k1\_pdiff\_7\ X0\ X1\ X2 = k1\_partfun1\ (k1\_euclid\ X0)\ (k1\_euclid\ np\_\_1)\ (k1\_euclid\ np\_\_1)\ k1\_numbers\ (k8\_pdiff\_1\ X0\ np\_\_1\ (k3\_pdiff\_1\ X0\ X1)\ X2)\ (k1\_pdiff\_1\ np\_\_1\ np\_\_1)))) \tag{19}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge(m2\_subset\_1\ X0\ k1\_numbers\ k5\_numbers))\Rightarrow (\forall X1.((\neg v1\_xboole\_0\ X1)\wedge(m2\_subset\_1\ X1\ k1\_numbers\ k5\_numbers))\Rightarrow(\forall X2.\forall X3.((v1\_funct\_1\ X3)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ (k1\_euclid\ X1)))))\Rightarrow((r1\_tarski\ X2\ (k1\_relset\_1\ (k1\_euclid\ X0)\ X3))\Rightarrow(\forall X4.((v1\_funct\_1\ X4)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ (k9\_funct\_2\ (k1\_euclid\ X0)\ (k1\_euclid\ X1))))))\Rightarrow((X4 = k1\_pdiff\_9\ X0\ X1\ X2\ X3)\Leftrightarrow((k1\_relset\_1\ (k1\_euclid\ X0)\ X4 = X2)\wedge(\forall X5.(m2\_finseq\_2\ X5\ k1\_numbers\ (k1\_euclid\ X0))\Rightarrow((X5 \in X2)\Rightarrow(k7\_partfun1\ (k9\_funct\_2\ (k1\_euclid\ X0)\ (k1\_euclid\ X1))\ X4\ X5 = k8\_pdiff\_1\ X0\ X1\ X3\ X5))))))))) \tag{20}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k4\_ordinal1)\Rightarrow(v7\_ordinal1\ X0) \tag{21}$$

Theorem 1

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge(m2\_subset\_1\ X0\ k1\_numbers\ k5\_numbers))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_euclid\ X0)))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ k1\_numbers))))\Rightarrow(\forall X3.((v1\_funct\_1\ X3)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ (k1\_euclid\ np\_\_1)))))\Rightarrow(((r2\_relset\_1\ (k1\_euclid\ X0)\ (k1\_euclid\ np\_\_1)\ (k3\_pdiff\_1\ X0\ X2)\ X3)\wedge((r1\_tarski\ X1\ (k1\_relset\_1\ (k1\_euclid\ X0)\ X2))\wedge(r2\_pdiff\_9\ X1\ X0\ X2)))\Rightarrow((r1\_pdiff\_6\ X1\ np\_\_1\ X0\ X3)\wedge(\forall X4.(m2\_finseq\_2\ X4\ k1\_numbers\ (k1\_euclid\ X0))\Rightarrow((X4\in X1)\Rightarrow(k7\_partfun1\ (k9\_funct\_2\ (k1\_euclid\ X0)\ k1\_numbers)\ (k2\_pdiff\_9\ X0\ X1\ X2)\ X4 = k3\_relat\_1\ (k7\_partfun1\ (k9\_funct\_2\ (k1\_euclid\ X0)\ (k1\_euclid\ np\_\_1))\ (k1\_pdiff\_9\ X0\ np\_\_1\ X1\ X3)\ X4)\ (k1\_pdiff\_1\ np\_\_1\ np\_\_1)))))))))$$