t27_pdiff_5 (TMRT-sLkEAn4PRs8Lx2kDd7wm2jDhyNwDM9M)

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Let $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_numbers : \iota$ be given. Let $k1\_euclid : \iota \Rightarrow \iota$ be given. Let $np\_\_3 : \iota$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ 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 $r9\_pdiff\_5 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_pdiff\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_rcomp\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_pdiff\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3\_fdiff\_1 : \iota \Rightarrow o$ be given. Let $v2\_fdiff\_1 : \iota \Rightarrow o$ be given. Let $k9\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_numbers : \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((v1\_funct\_1\ X0) \land (m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ np\_\_3)\ k1\_numbers)))) \Rightarrow (\forall X1.(m2\_finseq\_2\ X1\ k1\_numbers\ (k1\_euclid\ np\_\_3)) \Rightarrow ((r3\_pdiff\_1\ np\_\_3\ np\_\_3\ X0\ X1) \Leftrightarrow (\exists X2.(m1\_subset\_1\ X2\ k1\_numbers) \land (\exists X3.(m1\_subset\_1\ X3\ k1\_numbers) \land (\exists X4.(m1\_subset\_1\ X4\ k1\_numbers) \land ((X1 = k11\_finseq\_1\ X2\ X3\ X4) \land (\exists X5.(m1\_rcomp\_1\ X5\ X4) \land ((r1\_tarski\ X5\ (k1\_relset\_1\ k1\_numbers\ (k1\_pdiff\_2\ np\_\_3\ np\_\_3\ X0\ X1))) \land (\exists X6.((v1\_funct\_1\ X6) \land ((v3\_fdiff\_1\ X6) \land (m1\_subset\_1\ X6\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers))))) \land (\exists X7.((v1\_funct\_1\ X7) \land ((v2\_fdiff\_1\ X7) \land (m1\_subset\_1\ X7\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers))))) \land (\forall X8.(m1\_subset\_1\ X8\ k1\_numbers) \Rightarrow ((X8 \in X5) \Rightarrow (k9\_real\_1\ (k1\_seq\_1\ (k1\_pdiff\_2\ np\_\_3\ np\_\_3\ X0\ X1)\ X8)\ (k1\_seq\_1\ (k1\_pdiff\_2\ np\_\_3\ np\_\_3\ X0\ X1)\ X4) = k7\_real\_1\ (k1\_seq\_1\ X6\ (k9\_real\_1\ X8\ X4))\ (k1\_seq\_1\ X7\ (k9\_real\_1\ X8\ X4)))))))))))))))) \tag{1}$$

Assume the following.

$$((v2\_xxreal\_0\ np\_\_3) \land (m2\_subset\_1\ np\_\_3\ k1\_numbers\ k5\_numbers)) \land ((m1\_subset\_1\ np\_\_3\ k5\_numbers) \land (m1\_subset\_1\ np\_\_3\ k1\_numbers)) \tag{2}$$

Assume the following.

$$\neg v1\_xboole\_0\ np\_\_3 \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1\ X0\ k5\_numbers)\wedge(((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ k5\_numbers))\wedge((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X1)\ k1\_numbers))))))\Rightarrow((v1\_funct\_1\ (k1\_pdiff\_3\ X0\ X1\ X2))\wedge((v1\_funct\_2\ (k1\_pdiff\_3\ X0\ X1\ X2)\ (k1\_euclid\ X1)\ k1\_numbers)\wedge(m1\_subset\_1\ (k1\_pdiff\_3\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X1)\ k1\_numbers)))))) \tag{4}$$

Assume the following.

$$\forall X0.((v1\_funct\_1\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ np\_\_3)\ k1\_numbers))))\Rightarrow(\forall X1.(m2\_finseq\_2\ X1\ k1\_numbers\ (k1\_euclid\ np\_\_3))\Rightarrow((r9\_pdiff\_5\ X0\ X1)\Leftrightarrow(\exists X2.(m1\_subset\_1\ X2\ k1\_numbers)\wedge(\exists X3.(m1\_subset\_1\ X3\ k1\_numbers)\wedge(\exists X4.(m1\_subset\_1\ X4\ k1\_numbers)\wedge((X1 = k11\_finseq\_1\ X2\ X3\ X4)\wedge(\exists X5.(m1\_rcomp\_1\ X5\ X4)\wedge((r1\_tarski\ X5\ (k1\_relset\_1\ k1\_numbers\ (k1\_pdiff\_2\ np\_\_3\ np\_\_3\ (k1\_pdiff\_3\ np\_\_3\ np\_\_3\ X0)\ X1)))\wedge(\exists X6.((v1\_funct\_1\ X6)\wedge((v3\_fdiff\_1\ X6)\wedge(m1\_subset\_1\ X6\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers)))))\wedge(\exists X7.((v1\_funct\_1\ X7)\wedge((v2\_fdiff\_1\ X7)\wedge(m1\_subset\_1\ X7\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers)))))\wedge(\forall X8.(m1\_subset\_1\ X8\ k1\_numbers)\Rightarrow((X8 \in X5)\Rightarrow(k9\_real\_1\ (k1\_seq\_1\ (k1\_pdiff\_2\ np\_\_3\ np\_\_3\ (k1\_pdiff\_3\ np\_\_3\ np\_\_3\ X0)\ X1)\ X8)\ (k1\_seq\_1\ (k1\_pdiff\_2\ np\_\_3\ np\_\_3\ (k1\_pdiff\_3\ np\_\_3\ np\_\_3\ X0)\ X1)\ X4) = k7\_real\_1\ (k1\_seq\_1\ X6\ (k9\_real\_1\ X8\ X4))\ (k1\_seq\_1\ X7\ (k9\_real\_1\ X8\ X4)))))))))))))))) \tag{5}$$

Theorem 1

$$\forall X0.(m2\_finseq\_2\ X0\ k1\_numbers\ (k1\_euclid\ np\_\_3))\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ np\_\_3)\ k1\_numbers))))\Rightarrow((r9\_pdiff\_5\ X1\ X0)\Leftrightarrow(r3\_pdiff\_1\ np\_\_3\ np\_\_3\ (k1\_pdiff\_3\ np\_\_3\ np\_\_3\ X1)\ X0)))$$