t11_pdiff_3 (TMSMhp7XfiiTtpHJoGMbXhLL5h6QC5HGHSu)

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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 $np\_\_2 : \iota$ 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 $r3\_pdiff\_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np\_\_1 : \iota$ be given. Let $k1\_pdiff\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\forall X0.((v1\_funct\_1\ X0) \wedge (m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ np\_\_2)\ k1\_numbers)))) \Rightarrow (\forall X1.(m2\_finseq\_2\ X1\ k1\_numbers\ (k1\_euclid\ np\_\_2)) \Rightarrow ((r3\_pdiff\_1\ np\_\_2\ np\_\_1\ X0\ X1) \Leftrightarrow (\exists X2.(m1\_subset\_1\ X2\ k1\_numbers) \wedge (\exists X3.(m1\_subset\_1\ X3\ k1\_numbers) \wedge ((X1 = k10\_finseq\_1\ X2\ X3) \wedge (\exists X4.(m1\_rcomp\_1\ X4\ X2) \wedge ((r1\_tarski\ X4\ (k1\_relset\_1\ k1\_numbers\ (k1\_pdiff\_2\ np\_\_2\ np\_\_1\ X0\ X1))) \wedge (\exists X5.((v1\_funct\_1\ X5) \wedge ((v3\_fdiff\_1\ X5) \wedge (m1\_subset\_1\ X5\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers))))) \wedge (\exists X6.((v1\_funct\_1\ X6) \wedge ((v2\_fdiff\_1\ X6) \wedge (m1\_subset\_1\ X6\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers))))) \wedge (\forall X7.(m1\_subset\_1\ X7\ k1\_numbers) \Rightarrow ((X7 \in X4) \Rightarrow (k9\_real\_1\ (k1\_seq\_1\ (k1\_pdiff\_2\ np\_\_2\ np\_\_1\ X0\ X1)\ X7)\ (k1\_seq\_1\ (k1\_pdiff\_2\ np\_\_2\ np\_\_1\ X0\ X1)\ X2) = k7\_real\_1\ (k1\_seq\_1\ X5\ (k9\_real\_1\ X7\ X2))\ (k1\_seq\_1\ X6\ (k9\_real\_1\ X7\ X2))))))))))))))) \tag{1}$$

Assume the following.

$$((v2\_xxreal\_0\ np\_\_2) \wedge (m2\_subset\_1\ np\_\_2\ k1\_numbers\ k5\_numbers)) \wedge ((m1\_subset\_1\ np\_\_2\ k5\_numbers) \wedge (m1\_subset\_1\ np\_\_2\ k1\_numbers)) \tag{2}$$

Assume the following.

$$\neg v1\_xboole\_0\ np\_\_2 \tag{3}$$

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.

$$\forall X0.((v1\_funct\_1\ X0) \wedge (m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ np\_\_2)\ k1\_numbers)))) \Rightarrow (\forall X1.(m2\_finseq\_2\ X1\ k1\_numbers\ (k1\_euclid\ np\_\_2)) \Rightarrow ((r3\_pdiff\_3\ X0\ X1) \Leftrightarrow (\exists X2.(m1\_subset\_1\ X2\ k1\_numbers) \wedge (\exists X3.(m1\_subset\_1\ X3\ k1\_numbers) \wedge ((X1 = k10\_finseq\_1\ X2\ X3) \wedge (\exists X4.(m1\_rcomp\_1\ X4\ X2) \wedge ((r1\_tarski\ X4\ (k1\_relset\_1\ k1\_numbers\ (k1\_pdiff\_2\ np\_\_2\ np\_\_1\ (k1\_pdiff\_3\ np\_\_2\ np\_\_2\ X0)\ X1))) \wedge (\exists X5.((v1\_funct\_1\ X5) \wedge ((v3\_fdiff\_1\ X5) \wedge (m1\_subset\_1\ X5\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers))))) \wedge (\exists X6.((v1\_funct\_1\ X6) \wedge ((v2\_fdiff\_1\ X6) \wedge (m1\_subset\_1\ X6\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers))))) \wedge (\forall X7.(m1\_subset\_1\ X7\ k1\_numbers) \Rightarrow ((X7 \in X4) \Rightarrow (k9\_real\_1\ (k1\_seq\_1\ (k1\_pdiff\_2\ np\_\_2\ np\_\_1\ (k1\_pdiff\_3\ np\_\_2\ np\_\_2\ X0)\ X1)\ X7)\ (k1\_seq\_1\ (k1\_pdiff\_2\ np\_\_2\ np\_\_1\ (k1\_pdiff\_3\ np\_\_2\ np\_\_2\ X0)\ X1)\ X2) = k7\_real\_1\ (k1\_seq\_1\ X5\ (k9\_real\_1\ X7\ X2))\ (k1\_seq\_1\ X6\ (k9\_real\_1\ X7\ X2)))))))))))))) \tag{5}$$

Theorem 1

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