t1_fdiff_11 (TM-FVRY2MUwBhtUn8xgHVtn2uSAQHfErqroM)

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Let $v3\_rcomp\_1 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_numbers : \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16\_sin\_cos : \iota$ be given. Let $k1\_sin\_cos9 : \iota$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_real\_1 : \iota \Rightarrow \iota$ be given. Let $np\_\_1 : \iota$ be given. Let $r2\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19\_sin\_cos : \iota$ be given. Let $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_square\_1 : \iota \Rightarrow \iota$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xreal\_0 : \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((v3\_rcomp\_1\ X0) \wedge (m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ k1\_numbers))) \Rightarrow (\forall X1.((v1\_funct\_1\ X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers)))) \Rightarrow ((r2\_fdiff\_1\ X1\ X0) \Leftrightarrow ((r1\_tarski\ X0\ (k1\_relset\_1\ k1\_numbers\ X1)) \wedge (\forall X2.(m1\_subset\_1\ X2\ k1\_numbers) \Rightarrow ((X2 \in X0) \Rightarrow (r1\_fdiff\_1\ X1\ X2))))))) \tag{1}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers) \Rightarrow (\forall X1.((v1\_funct\_1\ X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers)))) \Rightarrow ((r1\_fdiff\_1\ X1\ X0) \Rightarrow ((r1\_xxreal\_0\ (k1\_seq\_1\ X1\ X0)\ (k1\_real\_1\ np\_\_1)) \vee ((r1\_xxreal\_0\ np\_\_1\ (k1\_seq\_1\ X1\ X0)) \vee ((r1\_fdiff\_1\ (k1\_partfun1\ k1\_numbers\ k1\_numbers\ k1\_numbers\ k1\_numbers\ X1\ k1\_sin\_cos9)\ X0) \wedge (k1\_fdiff\_1\ (k1\_partfun1\ k1\_numbers\ k1\_numbers\ k1\_numbers\ k1\_numbers\ X1\ k1\_sin\_cos9)\ X0 = k10\_real\_1\ (k1\_fdiff\_1\ X1\ X0)\ (k7\_real\_1\ np\_\_1\ (k5\_square\_1\ (k1\_seq\_1\ X1\ X0))))))))) \tag{2}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0) \Rightarrow ((r1\_fdiff\_1\ k16\_sin\_cos\ X0) \wedge (k1\_fdiff\_1\ k16\_sin\_cos\ X0 = k1\_seq\_1\ k19\_sin\_cos\ X0)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_funct\_1\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers))))\Rightarrow((v1\_funct\_1\ (k2\_fdiff\_1\ X0\ X1))\wedge(m1\_subset\_1\ (k2\_fdiff\_1\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers)))) \tag{4}$$

Assume the following.

$$(v1\_funct\_1\ k1\_sin\_cos9)\wedge(m1\_subset\_1\ k1\_sin\_cos9\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.(((v1\_funct\_1\ X4)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))\wedge((v1\_funct\_1\ X5)\wedge(m1\_subset\_1\ X5\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X2\ X3)))))\Rightarrow((v1\_funct\_1\ (k1\_partfun1\ X0\ X1\ X2\ X3\ X4\ X5))\wedge(m1\_subset\_1\ (k1\_partfun1\ X0\ X1\ X2\ X3\ X4\ X5)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X3)))) \tag{6}$$

Assume the following.

$$(v1\_funct\_1\ k16\_sin\_cos)\wedge((v1\_funct\_2\ k16\_sin\_cos\ k1\_numbers\ k1\_numbers)\wedge(m1\_subset\_1\ k16\_sin\_cos\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers)))) \tag{7}$$

Assume the following.

$$\forall X0.((v1\_funct\_1\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers))))\Rightarrow(\forall X1.(r2\_fdiff\_1\ X0\ X1)\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers))))\Rightarrow((X2 = k2\_fdiff\_1\ X0\ X1)\Leftrightarrow((k1\_relset\_1\ k1\_numbers\ X2 = X1)\wedge(\forall X3.(m1\_subset\_1\ X3\ k1\_numbers)\Rightarrow((X3 \in X1)\Rightarrow(k1\_seq\_1\ X2\ X3 = k1\_fdiff\_1\ X0\ X3))))))) \tag{8}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(v1\_xreal\_0\ X0) \tag{9}$$

Theorem 1

$$\forall X0.((v3\_rcomp\_1\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ k1\_numbers)))\Rightarrow(((r1\_tarski\ X0\ (k1\_relset\_1\ k1\_numbers\ (k1\_partfun1\ k1\_numbers\ k1\_numbers\ k1\_numbers\ k1\_numbers\ k16\_sin\_cos\ k1\_sin\_cos9)))\wedge(\forall X1.(m1\_subset\_1\ X1\ k1\_numbers)\Rightarrow((X1 \in X0)\Rightarrow((\neg r1\_xxreal\_0\ (k1\_seq\_1\ k16\_sin\_cos\ X1)\ (k1\_real\_1\ np\_\_1))\wedge(\neg r1\_xxreal\_0\ np\_\_1\ (k1\_seq\_1\ k16\_sin\_cos\ X1))))))\Rightarrow((r2\_fdiff\_1\ (k1\_partfun1\ k1\_numbers\ k1\_numbers\ k1\_numbers\ k1\_numbers\ k16\_sin\_cos\ k1\_sin\_cos9)\ X0)\wedge(\forall X1.(m1\_subset\_1\ X1\ k1\_numbers)\Rightarrow((X1 \in X0)\Rightarrow(k1\_seq\_1\ (k2\_fdiff\_1\ (k1\_partfun1\ k1\_numbers\ k1\_numbers\ k1\_numbers\ k1\_numbers\ k16\_sin\_cos\ k1\_sin\_cos9)\ X0)\ X1 = k10\_real\_1\ (k1\_seq\_1\ k19\_sin\_cos\ X1)\ (k7\_real\_1\ np\_\_1\ (k5\_square\_1\ (k1\_seq\_1\ k16\_sin\_cos\ X1))))))))$$