

## t2\_fdifff\_11

(TMbDnvyMpFY2SdtbvnCsxv2ire1cfpQ5pLb)

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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  $k1\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k16\_sin\_cos : \iota$  be given. Let  $k2\_sin\_cos9 : \iota$  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  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

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

Assume the following.

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

Assume the following.

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

Assume the following.

$$(v1\_funct\_1\ k2\_sin\_cos9) \wedge (m1\_subset\_1\ k2\_sin\_cos9\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_funct\_1\ X0) \wedge (m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers)))) \Rightarrow ((v1\_funct\_1\ (k2\_fdiff\_1\ X0\ X1)) \wedge (m1\_subset\_1\ (k2\_fdiff\_1\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers)))) \quad (5)$$

Assume the following.

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

Assume the following.

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

Assume the following.

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

Assume the following.

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

**Theorem 1**

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