

## t17\_fdifff\_2

(TMFmF3ALpvQHSDu3w58BtwA3R9mq3o2tDju)

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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  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $k1\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $k1\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v1\_membered : \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1\_tarski X0 X1) \wedge (r1\_tarski X0 X2)) \Rightarrow (r1\_tarski X0 (k3\_xboole\_0 X1 X2)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v3\_rcomp\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers))) \Rightarrow \\ & (\forall X1. ((v1\_funct\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & k1\_numbers k1\_numbers)))) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge (m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow (((r1\_tarski \\ & X0 (k1\_relset\_1 k1\_numbers (k3\_valued\_1 k1\_numbers k1\_numbers \\ & k1\_numbers X1 X2))) \wedge ((r2\_fdiff\_1 X1 X0) \wedge (r2\_fdiff\_1 X2 X0))) \Rightarrow \\ & ((r2\_fdiff\_1 (k3\_valued\_1 k1\_numbers k1\_numbers k1\_numbers X1 \\ & X2) X0) \wedge (\forall X3. (m1\_subset\_1 X3 k1\_numbers) \Rightarrow ((X3 \in X0) \Rightarrow (k1\_seq\_1 \\ & (k2\_fdiff\_1 (k3\_valued\_1 k1\_numbers k1\_numbers k1\_numbers X1 \\ & X2) X0) X3 = k7\_real\_1 (k1\_fdiff\_1 X1 X3) (k1\_fdiff\_1 X2 X3))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\Rightarrow((r2\_relset\_1 X0 X1 X2 X3)\Leftrightarrow(X2 = X3)) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers)\wedge(v1\_xreal\_0 X1))\Rightarrow(k7\_real\_1 X0 X1 = k2\_xcmplx\_0 X0 X1) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3\_membered X1)\wedge((v3\_membered X2)\wedge(((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\wedge((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X2))))))))\Rightarrow(k3\_valued\_1 X0 X1 X2 X3 X4 = k1\_valued\_1 X3 X4) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v3\_valued\_0 X0)))\Rightarrow(k1\_seq\_1 X0 X1 = k1\_funct\_1 X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge(v4\_relat\_1 X1 X0))\Rightarrow(k1\_relset\_1 X0 X1 = k9\_xtuple\_0 X1) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.k3\_xboole\_0 X0 X0 = X0 \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v3\_valued\_0 X0)))\wedge((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v3\_valued\_0 X1))))\Rightarrow(((v1\_relat\_1 (k1\_valued\_1 X0 X1))\wedge((v1\_funct\_1 (k1\_valued\_1 X0 X1))\wedge(v3\_valued\_0 (k1\_valued\_1 X0 X1)))) \quad (9)$$

Assume the following.

$$v3\_membered k1\_numbers \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3\_membered X1)\wedge((v3\_membered X2)\wedge(((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\wedge((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X2))))))))\Rightarrow(((v1\_funct\_1 (k3\_valued\_1 X0 X1 X2 X3 X4))\wedge(m1\_subset\_1 (k3\_valued\_1 X0 X1 X2 X3 X4) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers)))) \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1\_funct\_1 X0)\wedge(m1\_subset\_1 X0 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 k1\_numbers k1\_numbers))))\Rightarrow((v1\_funct\_1 (k2\_fdiff\_1 \\ X0 X1))\wedge(m1\_subset\_1 (k2\_fdiff\_1 X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ k1\_numbers k1\_numbers)))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v3\_valued\_0 \\ X0)))\Rightarrow(m1\_subset\_1 (k1\_seq\_1 X0 X1) k1\_numbers) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_funct\_1 X0)\wedge(m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ k1\_numbers k1\_numbers))))\Rightarrow(\forall X1.(r2\_fdiff\_1 X0 X1)\Rightarrow(\forall X2. \\ ((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers \\ k1\_numbers))))\Rightarrow((X2 = k2\_fdiff\_1 X0 X1)\Leftrightarrow((k1\_relset\_1 k1\_numbers \\ X2 = X1)\wedge(\forall X3.(m1\_subset\_1 X3 k1\_numbers)\Rightarrow((X3 \in X1)\Rightarrow(k1\_seq\_1 \\ X2 X3 = k1\_fdiff\_1 X0 X3)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_funct\_1 X0)\wedge(m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ k1\_numbers k1\_numbers))))\Rightarrow(\forall X1.(r2\_fdiff\_1 X0 X1)\Leftrightarrow(( \\ r1\_tarSKI X1 (k1\_relset\_1 k1\_numbers X0))\wedge(\forall X2.(m1\_subset\_1 \\ X2 k1\_numbers)\Rightarrow((X2 \in X1)\Rightarrow(r1\_fdiff\_1 (k2\_partfun1 k1\_numbers \\ k1\_numbers X0 X1) X2)))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_valued\_0 X0)))\Rightarrow \\ (\forall X1.((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_valued\_0 \\ X1)))\Rightarrow(\forall X2.((v1\_relat\_1 X2)\wedge(v1\_funct\_1 X2))\Rightarrow((X2 = k1\_valued\_1 \\ X0 X1)\Leftrightarrow((k9\_xtuple\_0 X2 = k3\_xboole\_0 (k9\_xtuple\_0 X0) (k9\_xtuple\_0 \\ X1))\wedge(\forall X3.(X3 \in k9\_xtuple\_0 X2)\Rightarrow(k1\_funct\_1 X2 X3 = k2\_xcmplx\_0 \\ (k1\_funct\_1 X0 X3) (k1\_funct\_1 X1 X3)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3\_membered \\ X1)\wedge((v3\_membered X2)\wedge(((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 X1))))\wedge((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 X2))))))\Rightarrow(k3\_valued\_1 X0 X1 X2 X3 X4 = k3\_valued\_1 \\ X0 X1 X2 X4 X3) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_valued\_0 \\ X0)))\wedge((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_valued\_0 X1))))\Rightarrow \\ (k1\_valued\_1 X0 X1 = k1\_valued\_1 X1 X0) \end{aligned} \quad (18)$$

Assume the following.

$$\forall X0.(v3\_membered\ X0)\Rightarrow(v1\_membered\ X0) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow((v4\_relat\_1\ X2\ X0)\wedge(v5\_relat\_1\ X2\ X1)) \quad (20)$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(v1\_xreal\_0\ X0) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(v1\_relat\_1\ X2) \quad (22)$$

Assume the following.

$$\forall X0.\forall X1.(v3\_membered\ X1)\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(v3\_valued\_0\ X2)) \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_membered\ X1)\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(v1\_valued\_0\ X2)) \quad (24)$$

**Theorem 1**

$$\begin{aligned} &\forall X0.((v3\_rcomp\_1\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ k1\_numbers)))\Rightarrow \\ &(\forall X1.((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers))))\Rightarrow(((r2\_fdiff\_1\ X1\ X0)\wedge(r2\_fdiff\_1\ X2\ X0))\Rightarrow((r2\_fdiff\_1\ (k3\_valued\_1\ k1\_numbers\ k1\_numbers\ k1\_numbers\ X1\ X2)\ X0)\wedge(r2\_relset\_1\ k1\_numbers\ k1\_numbers\ (k2\_fdiff\_1\ (k3\_valued\_1\ k1\_numbers\ k1\_numbers\ k1\_numbers\ X1\ X2)\ X0)\ (k3\_valued\_1\ k1\_numbers\ k1\_numbers\ k1\_numbers\ (k2\_fdiff\_1\ X1\ X0)\ (k2\_fdiff\_1\ X2\ X0)))))) \end{aligned}$$