

## t13\_fdifff\_3

(TMZRVFqtPrSmDx5gicoVbVtKFnxBTgwPtU6)

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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  $k1\_numbers : \iota$  be given. Let  $r4\_fdiff\_3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k3\_rfunct\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_fdiff\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_square\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_fdiff\_3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_rcomp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v2\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k3\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_comseq\_2 : \iota \Rightarrow o$  be given. Let  $k20\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k37\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k47\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v1\_funct\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
 & k1\_numbers k1\_numbers)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 k1\_numbers) \Rightarrow \\
 & (\forall X2.(m1\_subset\_1 X2 k1\_numbers) \Rightarrow (\neg(r1\_fdiff\_3 X0 X1) \wedge \\
 & ((k1\_seq\_1 X0 X1 \neq X2) \wedge ((\exists X3.(m1\_subset\_1 X3 k1\_numbers) \wedge \\
 & ((\neg r1\_xxreal\_0 X3 k6\_numbers) \wedge (r1\_tarski (k1\_rcomp\_1 (k9\_real\_1 \\
 & X1 X3) X1) (k1\_relset\_1 k1\_numbers X0)))) \wedge (\forall X3.(m1\_subset\_1 \\
 & X3 k1\_numbers) \Rightarrow (\neg(\neg r1\_xxreal\_0 X3 k6\_numbers) \wedge ((r1\_tarski ( \\
 & k1\_rcomp\_1 (k9\_real\_1 X1 X3) X1) (k1\_relset\_1 k1\_numbers X0)) \wedge \\
 & (\forall X4.(m1\_subset\_1 X4 k1\_numbers) \Rightarrow (\neg(X4 \in k1\_rcomp\_1 (k9\_real\_1 \\
 & X1 X3) X1) \wedge (k1\_seq\_1 X0 X4 = X2))))))))))
 \end{aligned}
 \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_funct\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ k1\_numbers k1\_numbers)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 k1\_numbers) \Rightarrow \\ ((r4\_fdiff\_3 X0 X1) \Rightarrow (r1\_fdiff\_3 X0 X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_funct\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ k1\_numbers k1\_numbers)))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge (m1\_subset\_1 \\ X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow (\forall X2. \\ (m1\_subset\_1 X2 k1\_numbers) \Rightarrow (((r4\_fdiff\_3 X0 X2) \wedge (r4\_fdiff\_3 \\ X1 X2)) \Rightarrow ((\forall X3.(m1\_subset\_1 X3 k1\_numbers) \Rightarrow (\neg(\neg r1\_xxreal\_0 \\ X3 k6\_numbers) \wedge (\forall X4.(m1\_subset\_1 X4 k1\_numbers) \Rightarrow (\neg(X4 \in \\ k1\_relset\_1 k1\_numbers X1) \wedge ((X4 \in k1\_rcomp\_1 (k9\_real\_1 X2 X3) \\ X2) \wedge (k1\_seq\_1 X1 X4 = k6\_numbers)))))) \vee ((r4\_fdiff\_3 (k3\_rfunct\_1 \\ k1\_numbers k1\_numbers X0 X1) X2) \wedge (k1\_fdiff\_3 X2 (k3\_rfunct\_1 k1\_numbers \\ k1\_numbers X0 X1) = k10\_real\_1 (k9\_real\_1 (k8\_real\_1 (k1\_fdiff\_3 \\ X2 X0) (k1\_seq\_1 X1 X2)) (k8\_real\_1 (k1\_fdiff\_3 X2 X1) (k1\_seq\_1 \\ X0 X2))) (k5\_square\_1 (k1\_seq\_1 X1 X2)))))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v3\_valued\_0 \\ X0))) \Rightarrow (m1\_subset\_1 (k1\_seq\_1 X0 X1) k1\_numbers) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_funct\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ k1\_numbers k1\_numbers)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 k1\_numbers) \Rightarrow \\ ((r4\_fdiff\_3 X0 X1) \Leftrightarrow ((\exists X2.(m1\_subset\_1 X2 k1\_numbers) \wedge \\ ((\neg r1\_xxreal\_0 X2 k6\_numbers) \wedge (r1\_tarski (k1\_rcomp\_1 (k9\_real\_1 \\ X1 X2) X1) (k1\_relset\_1 k1\_numbers X0)))) \wedge (\forall X2.((v2\_relat\_1 \\ X2) \wedge ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 k5\_numbers k1\_numbers) \wedge \\ ((v1\_fdiff\_1 X2 k6\_numbers) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ k5\_numbers k1\_numbers)))))) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge \\ ((v3\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 k5\_numbers k1\_numbers) \wedge (m1\_subset\_1 \\ X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow (( \\ (k2\_relset\_1 k1\_numbers X3 = k1\_tarski X1) \wedge ((r1\_tarski (k2\_relset\_1 \\ k1\_numbers (k3\_valued\_1 k5\_numbers k1\_numbers k1\_numbers X2 X3)) \\ (k1\_relset\_1 k1\_numbers X0)) \wedge (\forall X4.(m2\_subset\_1 X4 k1\_numbers \\ k5\_numbers) \Rightarrow (\neg r1\_xxreal\_0 k6\_numbers (k1\_seq\_1 X2 X4)))) \Rightarrow ( \\ v2\_comseq\_2 (k20\_valued\_1 k5\_numbers k1\_numbers k1\_numbers ( \\ k37\_valued\_1 k5\_numbers k1\_numbers X2) (k47\_valued\_1 k5\_numbers \\ k1\_numbers k1\_numbers (k8\_funct\_2 k5\_numbers k1\_numbers k1\_numbers \\ (k3\_valued\_1 k5\_numbers k1\_numbers k1\_numbers X2 X3) X0) (k8\_funct\_2 \\ k5\_numbers k1\_numbers k1\_numbers X3 X0)))))))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v5\_relat\_1 X0 k1\_numbers)) \Rightarrow ((v1\_relat\_1 X0) \wedge (v3\_valued\_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow ((v4\_relat\_1 X2 X0) \wedge (v5\_relat\_1 X2 X1)) \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \quad (8)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((v1\_funct\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 k1\_numbers) \Rightarrow (((r4\_fdiff\_3 X0 X2) \wedge (r4\_fdiff\_3 X1 X2)) \Rightarrow ((k1\_seq\_1 X1 X2 = k6\_numbers) \vee ((r4\_fdiff\_3 (k3\_rfunct\_1 k1\_numbers k1\_numbers X0 X1) X2) \wedge (k1\_fdiff\_3 X2 (k3\_rfunct\_1 k1\_numbers k1\_numbers X0 X1) = k10\_real\_1 (k9\_real\_1 (k8\_real\_1 (k1\_fdiff\_3 X2 X0) (k1\_seq\_1 X1 X2)) (k8\_real\_1 (k1\_fdiff\_3 X2 X1) (k1\_seq\_1 X0 X2))) (k5\_square\_1 (k1\_seq\_1 X1 X2)))))))) \end{aligned}$$