

## t9\_fdifff\_3

(TMHBT1WP69U5o8Xx9dkRDBuj3vXm2VHgTZY)

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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  $k1\_fdiff\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_rcomp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $k2\_seq\_2 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.((v1\_funct\_1 \\
 & X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow \\
 & ((r4\_fdiff\_3 X1 X0) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k1\_numbers) \Rightarrow \\
 & ((X2 = k1\_fdiff\_3 X0 X1) \Leftrightarrow (\forall X3.((v2\_relat\_1 X3) \wedge ((v1\_funct\_1 \\
 & X3) \wedge ((v1\_funct\_2 X3 k5\_numbers k1\_numbers) \wedge ((v1\_fdiff\_1 X3 k6\_numbers) \wedge \\
 & (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
 & (\forall X4.((v1\_funct\_1 X4) \wedge ((v3\_funct\_1 X4) \wedge ((v1\_funct\_2 \\
 & X4 k5\_numbers k1\_numbers) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
 & k5\_numbers k1\_numbers)))))) \Rightarrow (((k2\_relset\_1 k1\_numbers X4 = k1\_tarski \\
 & X0) \wedge ((r1\_tarski (k2\_relset\_1 k1\_numbers (k3\_valued\_1 k5\_numbers \\
 & k1\_numbers k1\_numbers X3 X4)) (k1\_relset\_1 k1\_numbers X1)) \wedge (\forall X5. \\
 & (m2\_subset\_1 X5 k1\_numbers k5\_numbers) \Rightarrow (\neg r1\_xxreal\_0 k6\_numbers \\
 & (k1\_seq\_1 X3 X5)))))) \Rightarrow (X2 = k2\_seq\_2 (k20\_valued\_1 k5\_numbers k1\_numbers \\
 & k1\_numbers (k37\_valued\_1 k5\_numbers k1\_numbers X3) (k47\_valued\_1 \\
 & k5\_numbers k1\_numbers k1\_numbers (k8\_funct\_2 k5\_numbers k1\_numbers \\
 & k1\_numbers (k3\_valued\_1 k5\_numbers k1\_numbers k1\_numbers X3 X4) \\
 & X1) (k8\_funct\_2 k5\_numbers k1\_numbers k1\_numbers X4 X1))))))))) \\
 & (1)
 \end{aligned}$$

Assume the following.

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

(2)

**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.(m1\_subset\_1 X1 k1\_numbers) \Rightarrow \\
& (\forall X2.(m1\_subset\_1 X2 k1\_numbers) \Rightarrow (((r4\_fdiff\_3 X0 X1) \wedge \\
& (k1\_fdiff\_3 X1 X0 = X2)) \Rightarrow ((\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.((v2\_relat\_1 \\
& X3) \wedge ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 k5\_numbers k1\_numbers) \wedge \\
& ((v1\_fdiff\_1 X3 k6\_numbers) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& k5\_numbers k1\_numbers)))))) \Rightarrow (\forall X4.((v1\_funct\_1 X4) \wedge \\
& ((v3\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 k5\_numbers k1\_numbers) \wedge (m1\_subset\_1 \\
& X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow (( \\
& (k2\_relset\_1 k1\_numbers X4 = k1\_tarski X1) \wedge ((r1\_tarski (k2\_relset\_1 \\
& k1\_numbers (k3\_valued\_1 k5\_numbers k1\_numbers k1\_numbers X3 X4)) \\
& (k1\_relset\_1 k1\_numbers X0)) \wedge (\forall X5.(m2\_subset\_1 X5 k1\_numbers \\
& k5\_numbers) \Rightarrow (\neg r1\_xxreal\_0 k6\_numbers (k1\_seq\_1 X3 X5)))))) \Rightarrow ( \\
& (v2\_comseq\_2 (k20\_valued\_1 k5\_numbers k1\_numbers k1\_numbers \\
& (k37\_valued\_1 k5\_numbers k1\_numbers X3) (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 X3 X4) X0) (k8\_funct\_2 \\
& k5\_numbers k1\_numbers k1\_numbers X4 X0)))) \wedge (k2\_seq\_2 (k20\_valued\_1 \\
& k5\_numbers k1\_numbers k1\_numbers (k37\_valued\_1 k5\_numbers k1\_numbers \\
& X3) (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 X3 X4) X0) (k8\_funct\_2 k5\_numbers k1\_numbers k1\_numbers \\
& X4 X0))) = X2)))))) \wedge ((\forall X3.((v2\_relat\_1 X3) \wedge ((v1\_funct\_1 \\
& X3) \wedge ((v1\_funct\_2 X3 k5\_numbers k1\_numbers) \wedge ((v1\_fdiff\_1 X3 k6\_numbers) \wedge \\
& (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
& (\forall X4.((v1\_funct\_1 X4) \wedge ((v3\_funct\_1 X4) \wedge ((v1\_funct\_2 \\
& X4 k5\_numbers k1\_numbers) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& k5\_numbers k1\_numbers)))))) \Rightarrow (((k2\_relset\_1 k1\_numbers X4 = k1\_tarski \\
& X1) \wedge ((r1\_tarski (k2\_relset\_1 k1\_numbers (k3\_valued\_1 k5\_numbers \\
& k1\_numbers k1\_numbers X3 X4)) (k1\_relset\_1 k1\_numbers X0)) \wedge (\forall X5. \\
& (m2\_subset\_1 X5 k1\_numbers k5\_numbers) \Rightarrow (\neg r1\_xxreal\_0 k6\_numbers \\
& (k1\_seq\_1 X3 X5)))))) \Rightarrow ((v2\_comseq\_2 (k20\_valued\_1 k5\_numbers \\
& k1\_numbers k1\_numbers (k37\_valued\_1 k5\_numbers k1\_numbers X3) \\
& (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 \\
& X3 X4) X0) (k8\_funct\_2 k5\_numbers k1\_numbers k1\_numbers X4 X0)))) \wedge \\
& (k2\_seq\_2 (k20\_valued\_1 k5\_numbers k1\_numbers k1\_numbers (k37\_valued\_1 \\
& k5\_numbers k1\_numbers X3) (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 X3 X4) X0) (k8\_funct\_2 k5\_numbers \\
& k1\_numbers k1\_numbers X4 X0))) = X2)))))) \Rightarrow ((\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)))) \vee ((r4\_fdiff\_3 \\
& X0 X1) \wedge (k1\_fdiff\_3 X1 X0 = X2))))))
\end{aligned}$$