

## t1\_seqm\_3

(TMJ4CTfZwcBt9MBwDzjDqEhEKtd4xrvHkTn)

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Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k1\_numbers : \iota$  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  $v5\_valued\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k1\_numbers) \wedge \\
 & (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
 & (((\forall X1.(m2\_subset\_1 X1 k1\_numbers k5\_numbers) \Rightarrow (\neg r1\_xxreal\_0 \\
 & (k8\_nat\_1 k1\_numbers X0 (k2\_nat\_1 X1 np\_1)) (k8\_nat\_1 k1\_numbers \\
 & X0 X1))) \Rightarrow (\forall X1.(m2\_subset\_1 X1 k1\_numbers k5\_numbers) \Rightarrow \\
 & (\forall X2.(m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow (\neg r1\_xxreal\_0 \\
 & (k8\_nat\_1 k1\_numbers X0 (k2\_nat\_1 (k2\_nat\_1 X1 np\_1) X2)) (k8\_nat\_1 \\
 & k1\_numbers X0 X1)))))) \wedge (((\forall X1.(m2\_subset\_1 X1 k1\_numbers \\
 & k5\_numbers) \Rightarrow (\forall X2.(m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow \\
 & (\neg r1\_xxreal\_0 (k8\_nat\_1 k1\_numbers X0 (k2\_nat\_1 (k2\_nat\_1 X1 np\_1) \\
 & X2)) (k8\_nat\_1 k1\_numbers X0 X1)))))) \Rightarrow (\forall X1.(m2\_subset\_1 \\
 & X1 k1\_numbers k5\_numbers) \Rightarrow (\forall X2.(m2\_subset\_1 X2 k1\_numbers \\
 & k5\_numbers) \Rightarrow (\neg (\neg r1\_xxreal\_0 X2 X1) \wedge (r1\_xxreal\_0 (k8\_nat\_1 k1\_numbers \\
 & X0 X2) (k8\_nat\_1 k1\_numbers X0 X1)))))) \wedge ((\forall X1.(m2\_subset\_1 \\
 & X1 k1\_numbers k5\_numbers) \Rightarrow (\forall X2.(m2\_subset\_1 X2 k1\_numbers \\
 & k5\_numbers) \Rightarrow (\neg (\neg r1\_xxreal\_0 X2 X1) \wedge (r1\_xxreal\_0 (k8\_nat\_1 k1\_numbers \\
 & X0 X2) (k8\_nat\_1 k1\_numbers X0 X1)))))) \Rightarrow (\forall X1.(m2\_subset\_1 \\
 & X1 k1\_numbers k5\_numbers) \Rightarrow (\neg r1\_xxreal\_0 (k8\_nat\_1 k1\_numbers \\
 & X0 (k2\_nat\_1 X1 np\_1)) (k8\_nat\_1 k1\_numbers X0 X1))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k1\_numbers) \wedge \\
& (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
& ((v5\_valued\_0 X0) \Leftrightarrow (\forall X1.(m2\_subset\_1 X1 k1\_numbers k5\_numbers) \Rightarrow \\
& (\neg r1\_xxreal\_0 (k8\_nat\_1 k1\_numbers X0 (k2\_nat\_1 X1 np\_1)) (k8\_nat\_1 \\
& k1\_numbers X0 X1))))
\end{aligned} \tag{2}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k1\_numbers) \wedge \\
& (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
& ((v5\_valued\_0 X0) \Leftrightarrow (\forall X1.(m2\_subset\_1 X1 k1\_numbers k5\_numbers) \Rightarrow \\
& (\forall X2.(m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow (\neg(\neg r1\_xxreal\_0 \\
& X2 X1) \wedge (r1\_xxreal\_0 (k8\_nat\_1 k1\_numbers X0 X2) (k8\_nat\_1 k1\_numbers \\
& X0 X1))))))
\end{aligned}$$