

# t52\_rinfsup1 (TMPyrFnMRjEon- ssfDggEZntV2DbSUCmwKAB)

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Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $v1\_comseq\_2 : \iota \Rightarrow o$  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  $k3\_rinfsup1 : \iota \Rightarrow \iota$  be given. Let  $k4\_rinfsup1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v5\_xxreal\_2 : \iota \Rightarrow o$  be given. Let  $k5\_seq\_4 : \iota \Rightarrow \iota$  be given. Let  $k4\_seq\_4 : \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \neg(v1\_xboole\_0 X0) \wedge ((X0 \neq X1) \wedge (v1\_xboole\_0 X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \neg(X0 \in X1) \wedge (v1\_xboole\_0 X1) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k1\_numbers) \wedge \\ & (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\ & ((v1\_comseq\_2 X0) \Rightarrow (\forall X1. (m2\_subset\_1 X1 k1\_numbers k5\_numbers) \Rightarrow \\ & (\forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 k1\_numbers)) \Rightarrow ((X2 = \\ & ReplSep (toset (\lambda X3 : \iota. m2\_subset\_1 X3 k1\_numbers k5\_numbers)) \\ & (\lambda X3 : \iota. r1\_xxreal\_0 X1 X3) (\lambda X3 : \iota. k1\_seq\_1 X0 X3)) \Rightarrow \\ & (v5\_xxreal\_2 X2)))))) \quad (3) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k1\_numbers) \wedge \\ & (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\ & (\forall X1. (m2\_subset\_1 X1 k1\_numbers k5\_numbers) \Rightarrow (m1\_subset\_1 \\ & (ReplSep (toset (\lambda X2 : \iota. m2\_subset\_1 X2 k1\_numbers k5\_numbers)) \\ & (\lambda X2 : \iota. r1\_xxreal\_0 X1 X2) (\lambda X2 : \iota. k1\_seq\_1 X0 X2)) ( \\ & k1\_zfmisc\_1 k1\_numbers)))) \quad (4) \end{aligned}$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers)) \Rightarrow ((v5\_xxreal\_2 X0) \Rightarrow ((v1\_xboole\_0 X0) \vee (r1\_xxreal\_0 (k5\_seq\_4 X0) (k4\_seq\_4 X0)))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow (r1\_xxreal\_0 X0 X0) \quad (6)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 X2 X0 X1) \Rightarrow (m1\_subset\_1 X2 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers)) \Rightarrow (m1\_subset\_1 (k5\_seq\_4 X0) k1\_numbers) \quad (9)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (10)$$

Assume the following.

$$\forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k1\_numbers) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow ((v1\_funct\_1 (k4\_rinf sup1 X0)) \wedge ((v1\_funct\_2 (k4\_rinf sup1 X0) k5\_numbers k1\_numbers) \wedge (m1\_subset\_1 (k4\_rinf sup1 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \quad (11)$$

Assume the following.

$$\forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k1\_numbers) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow ((v1\_funct\_1 (k3\_rinf sup1 X0)) \wedge ((v1\_funct\_2 (k3\_rinf sup1 X0) k5\_numbers k1\_numbers) \wedge (m1\_subset\_1 (k3\_rinf sup1 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \quad (12)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k1\_numbers) \wedge \\
& (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
& (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers k1\_numbers) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
& ((X1 = k4\_rinfsup1 X0) \Leftrightarrow (\forall X2.(m2\_subset\_1 X2 k1\_numbers \\
& k5\_numbers) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 k1\_numbers) \Rightarrow \\
& ((X3 = ReplSep (toset (\lambda X4 : \iota.m2\_subset\_1 X4 k1\_numbers k5\_numbers) \\
& (\lambda X4 : \iota.r1\_xxreal\_0 X2 X4) (\lambda X4 : \iota.k1\_seq\_1 X0 X4)) \Rightarrow \\
& (k1\_seq\_1 X1 X2 = k4\_seq\_4 X3))))))
\end{aligned} \tag{13}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k1\_numbers) \wedge \\
& (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
& (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers k1\_numbers) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\
& ((X1 = k3\_rinfsup1 X0) \Leftrightarrow (\forall X2.(m2\_subset\_1 X2 k1\_numbers \\
& k5\_numbers) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 k1\_numbers) \Rightarrow \\
& ((X3 = ReplSep (toset (\lambda X4 : \iota.m2\_subset\_1 X4 k1\_numbers k5\_numbers) \\
& (\lambda X4 : \iota.r1\_xxreal\_0 X2 X4) (\lambda X4 : \iota.k1\_seq\_1 X0 X4)) \Rightarrow \\
& (k1\_seq\_1 X1 X2 = k5\_seq\_4 X3))))))
\end{aligned} \tag{14}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xxreal\_0 X0) \tag{15}$$

Assume the following.

$$\forall X0.\forall X1.(v1\_xboole\_0 X0) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_xboole\_0 X2)) \tag{16}$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xreal\_0 X0) \tag{17}$$

### Theorem 1

$$\begin{aligned}
& \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\
& ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers k1\_numbers) \wedge (m1\_subset\_1 \\
& X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow ((v1\_comseq\_2 \\
& X1) \Rightarrow (r1\_xxreal\_0 (k1\_seq\_1 (k3\_rinfsup1 X1) X0) (k1\_seq\_1 (k4\_rinfsup1 \\
& X1) X0)))
\end{aligned}$$