

## t62\_rinfsup1

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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  $v1\_seq\_2 : \iota \Rightarrow o$  be given. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_rinfsup1 : \iota \Rightarrow \iota$  be given. Let  $k32\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_rinfsup1 : \iota \Rightarrow \iota$  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  $k1\_real\_1 : \iota \Rightarrow \iota$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $k30\_valued\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\ & ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers k1\_numbers) \wedge (m1\_subset\_1 \\ & X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow ((v1\_seq\_2 \\ & X1) \Rightarrow (k1\_seq\_1 (k4\_rinfsup1 X1) X0 = k1\_real\_1 (k1\_seq\_1 (k3\_rinfsup1 \\ & (k32\_valued\_1 k5\_numbers k1\_numbers X1)) X0))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k1\_numbers) \wedge \\ & (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\ & (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers k1\_numbers) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\ & ((r2\_funct\_2 k5\_numbers k1\_numbers X0 (k32\_valued\_1 k5\_numbers \\ & k1\_numbers X1)) \Leftrightarrow (\forall X2.(m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow \\ & (k1\_seq\_1 X0 X2 = k1\_real\_1 (k1\_seq\_1 X1 X2)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v3\_membered X1) \wedge ((v1\_funct\_1 \\ & X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow (k32\_valued\_1 \\ & X0 X1 X2 = k30\_valued\_1 X2) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v1\_xboole\_0 X1)\wedge(v3\_membered X1))\wedge((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\Rightarrow((v1\_funct\_1 (k30\_valued\_1 X2))\wedge(v1\_partfun1 (k30\_valued\_1 X2) X0))) \quad (4)$$

Assume the following.

$$v3\_membered k1\_numbers \quad (5)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (6)$$

Assume the following.

$$\forall X0.((v1\_funct\_1 X0)\wedge((v1\_funct\_2 X0 k5\_numbers k1\_numbers)\wedge(m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers))))\Rightarrow((v1\_funct\_1 (k4\_rinf sup1 X0))\wedge((v1\_funct\_2 (k4\_rinf sup1 X0) k5\_numbers k1\_numbers)\wedge(m1\_subset\_1 (k4\_rinf sup1 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \quad (7)$$

Assume the following.

$$\forall X0.((v1\_funct\_1 X0)\wedge((v1\_funct\_2 X0 k5\_numbers k1\_numbers)\wedge(m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers))))\Rightarrow((v1\_funct\_1 (k3\_rinf sup1 X0))\wedge((v1\_funct\_2 (k3\_rinf sup1 X0) k5\_numbers k1\_numbers)\wedge(m1\_subset\_1 (k3\_rinf sup1 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v3\_membered X1)\wedge((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\Rightarrow((v1\_funct\_1 (k32\_valued\_1 X0 X1 X2))\wedge(m1\_subset\_1 (k32\_valued\_1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers)))))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow((v1\_partfun1 X2 X0)\Rightarrow(v1\_funct\_2 X2 X0 X1)) \quad (10)$$

**Theorem 1**

$$\forall X0.((v1\_funct\_1 X0)\wedge((v1\_funct\_2 X0 k5\_numbers k1\_numbers)\wedge(m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers))))\Rightarrow((v1\_seq\_2 X0)\Rightarrow(r2\_funct\_2 k5\_numbers k1\_numbers (k4\_rinf sup1 X0) (k32\_valued\_1 k5\_numbers k1\_numbers (k3\_rinf sup1 (k32\_valued\_1 k5\_numbers k1\_numbers X0))))))$$