

## t73\_rfunct\_1

(TMdMabhrK8n8PowRk1EGBHg7RyYwzEbGnM5)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v1\_comseq\_2 : \iota \Rightarrow o$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k18\_complex1 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v3\_valued\_0 X0))) \Rightarrow \\ ((v1\_comseq\_2 X0) \Leftrightarrow (\exists X1.(v1\_xreal\_0 X1) \wedge (\forall X2.( \\ X2 \in k9\_xtuple\_0 X0) \Rightarrow (r1\_xxreal\_0 (k18\_complex1 (k1\_funct\_1 X0 \\ X2)) X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1.(v1\_relat\_1 X1) \Rightarrow (k9\_xtuple\_0 (k5\_relat\_1 X1 X0) = k3\_xboole\_0 (k9\_xtuple\_0 X1) X0) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2.((v1\_relat\_1 X2) \wedge (v1\_funct\_1 \\ X2)) \Rightarrow ((X0 \in k3\_xboole\_0 (k9\_xtuple\_0 X2) X1) \Rightarrow (k1\_funct\_1 (k5\_relat\_1 \\ X2 X1) X0 = k1\_funct\_1 X2 X0)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2.((v1\_relat\_1 X2) \wedge (v1\_funct\_1 \\ X2)) \Rightarrow ((X0 \in k9\_xtuple\_0 (k5\_relat\_1 X2 X1)) \Rightarrow (k1\_funct\_1 (k5\_relat\_1 \\ X2 X1) X0 = k1\_funct\_1 X2 X0)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. \forall X1.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow ((v1\_relat\_1 (k5\_relat\_1 X0 X1)) \wedge (v1\_funct\_1 (k5\_relat\_1 X0 X1))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0)\wedge(v3\_valued\_0 X0))\Rightarrow((v1\_relat\_1 (k5\_relat\_1 X0 X1))\wedge(v3\_valued\_0 (k5\_relat\_1 X0 X1))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.k3\_xboole\_0 X0 X1 = k3\_xboole\_0 X1 X0 \quad (7)$$

**Theorem 1**

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v3\_valued\_0 X1)))\Rightarrow((v1\_comseq\_2 (k5\_relat\_1 X1 X0))\Leftrightarrow(\exists X2.(v1\_xreal\_0 X2)\wedge(\forall X3.(X3 \in k3\_xboole\_0 X0 (k9\_xtuple\_0 X1))\Rightarrow(r1\_xreal\_0 (k18\_complex1 (k1\_funct\_1 X1 X3)) X2))))$$