

## t79\_rfunct\_1

(TMMn7E2RUX4MeG6nGW37Xd6dAjE6sMh6K3t)

October 27, 2020

Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. 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  $v2\_seq\_2 : \iota \Rightarrow o$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k24\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_seq\_2 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $v3\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_valued\_0 \\ X1))) \Rightarrow (\forall X2. (v1\_xcmplx\_0 X2) \Rightarrow (k5\_relat\_1 (k24\_valued\_1 \\ X1 X2) X0 = k24\_valued\_1 (k5\_relat\_1 X1 X0) X2)) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. (v1\_xreal\_0 X0) \Rightarrow (\forall X1. (v1\_xreal\_0 X1) \Rightarrow (((r1\_xxreal\_0 \\ X0 X1) \wedge (v3\_xxreal\_0 X1)) \Rightarrow (v3\_xxreal\_0 X0))) \quad (3)$$

Assume the following.

$$\forall X0. (v1\_xreal\_0 X0) \Rightarrow (\forall X1. (v1\_xreal\_0 X1) \Rightarrow (((r1\_xxreal\_0 \\ X0 X1) \wedge (v2\_xxreal\_0 X0)) \Rightarrow (v2\_xxreal\_0 X1))) \quad (4)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (5)$$

Assume the following.

$$\exists X0. (v1\_xboole\_0 X0) \wedge ((v1\_xcmplx\_0 X0) \wedge ((v1\_xxreal\_0 \\ X0) \wedge (v1\_xreal\_0 X0))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge(v1\_funct\_1 X0)\wedge(v3\_valued\_0 X0)\wedge(v2\_seq\_2 X0)))\wedge((\neg v3\_xxreal\_0 X1)\wedge(v1\_xreal\_0 X1))\Rightarrow((v1\_relat\_1 (k24\_valued\_1 X0 X1))\wedge(v1\_funct\_1 (k24\_valued\_1 X0 X1))\wedge(v3\_valued\_0 (k24\_valued\_1 X0 X1))\wedge(v2\_seq\_2 (k24\_valued\_1 X0 X1)))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0)\wedge(v1\_funct\_1 X0))\Rightarrow((v1\_relat\_1 (k5\_relat\_1 X0 X1))\wedge(v1\_funct\_1 (k5\_relat\_1 X0 X1))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0)\wedge(v3\_valued\_0 X0))\Rightarrow((v1\_relat\_1 (k5\_relat\_1 X0 X1))\wedge(v3\_valued\_0 (k5\_relat\_1 X0 X1))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge(v1\_funct\_1 X0)\wedge(v3\_valued\_0 X0)\wedge(v2\_seq\_2 X0)))\wedge((\neg v2\_xxreal\_0 X1)\wedge(v1\_xreal\_0 X1))\Rightarrow((v1\_relat\_1 (k24\_valued\_1 X0 X1))\wedge(v1\_funct\_1 (k24\_valued\_1 X0 X1))\wedge(v3\_valued\_0 (k24\_valued\_1 X0 X1))\wedge(v1\_seq\_2 (k24\_valued\_1 X0 X1)))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1 X0)\Rightarrow(v1\_relat\_1 (k5\_relat\_1 X0 X1)) \quad (11)$$

Assume the following.

$$k1\_xboole\_0 = the (\lambda X0 : \iota.v1\_xboole\_0 X0) \quad (12)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge(v3\_valued\_0 X0))\Rightarrow((v1\_relat\_1 X0)\wedge(v1\_valued\_0 X0)) \quad (13)$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0 X0)\wedge(v3\_xxreal\_0 X0))\Rightarrow((\neg v1\_xboole\_0 X0)\wedge((v1\_xxreal\_0 X0)\wedge(\neg v2\_xxreal\_0 X0))) \quad (14)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(v1\_xxreal\_0 X0) \quad (15)$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0 X0) \wedge (v2\_xxreal\_0 X0)) \Rightarrow ((\neg v1\_xboole\_0 X0) \wedge ((v1\_xxreal\_0 X0) \wedge (\neg v3\_xxreal\_0 X0))) \quad (16)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xcmplx\_0 X0) \quad (17)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. \forall X1. (v1\_xreal\_0 X1) \Rightarrow (\forall X2. ((v1\_relat\_1 \\ & X2) \wedge ((v1\_funct\_1 X2) \wedge (v3\_valued\_0 X2))) \Rightarrow (((v2\_seq\_2 (k5\_relat\_1 \\ & X2 X0)) \wedge (r1\_xxreal\_0 k6\_numbers X1)) \Rightarrow (v2\_seq\_2 (k5\_relat\_1 ( \\ & k24\_valued\_1 X2 X1) X0))) \wedge (((v2\_seq\_2 (k5\_relat\_1 X2 X0)) \wedge (r1\_xxreal\_0 \\ & X1 k6\_numbers)) \Rightarrow (v1\_seq\_2 (k5\_relat\_1 (k24\_valued\_1 X2 X1) X0)))))) \end{aligned}$$