

## t52\_rvsum\_2

(TMWWm4UbyQWjtTPFc4vvdXsBV22FokvqUky)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k7\_rvsum\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_rvsum\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_rvsum\_2 : \iota \Rightarrow \iota$  be given. Let  $k30\_valued\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finseq\_1 \\ & X0) \wedge (v1\_valued\_0 X0)))) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 \\ & X1) \wedge ((v1\_finseq\_1 X1) \wedge (v1\_valued\_0 X1)))) \Rightarrow ((k3\_finseq\_1 X0 = \\ & k3\_finseq\_1 X1) \Rightarrow (k3\_finseq\_1 (k3\_rvsum\_2 X0 X1) = k3\_finseq\_1 \\ & X0))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finseq\_1 \\ & X0) \wedge (v1\_valued\_0 X0)))) \Rightarrow (k3\_finseq\_1 (k5\_rvsum\_2 X0) = k3\_finseq\_1 \\ & X0) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finseq\_1 \\ & X0) \wedge (v1\_valued\_0 X0)))) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 \\ & X1) \wedge ((v1\_finseq\_1 X1) \wedge (v1\_valued\_0 X1)))) \Rightarrow (k5\_rvsum\_2 (k7\_rvsum\_2 \\ & X0 X1) = k3\_rvsum\_2 (k5\_rvsum\_2 X0) X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finseq\_1 \\ & X0) \wedge (v1\_valued\_0 X0)))) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 \\ & X1) \wedge ((v1\_finseq\_1 X1) \wedge (v1\_valued\_0 X1)))) \Rightarrow (k5\_rvsum\_2 (k7\_rvsum\_2 \\ & X0 X1) = k7\_rvsum\_2 X1 X0)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finseq\_1 \\ & X0) \wedge (v1\_valued\_0 X0)))) \Rightarrow (k5\_rvsum\_2 X0 = k30\_valued\_1 X0) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_valued\_0 X0) \wedge (v1\_finseq\_1 X0)))) \Rightarrow ((v1\_relat\_1 (k30\_valued\_1 X0)) \wedge ((v1\_funct\_1 (k30\_valued\_1 X0)) \wedge ((v1\_valued\_0 (k30\_valued\_1 X0)) \wedge (v1\_finseq\_1 (k30\_valued\_1 X0)))))) \quad (6)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \Rightarrow ((v1\_relat\_1 (k30\_valued\_1 X0)) \wedge ((v1\_funct\_1 (k30\_valued\_1 X0)) \wedge (v1\_valued\_0 (k30\_valued\_1 X0)))) \quad (7)$$

**Theorem 1**

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finseq\_1 X0) \wedge (v1\_valued\_0 X0)))) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_finseq\_1 X1) \wedge (v1\_valued\_0 X1)))) \Rightarrow ((k3\_finseq\_1 X0 = k3\_finseq\_1 X1) \Rightarrow (k3\_finseq\_1 (k7\_rvsum\_2 X0 X1) = k3\_finseq\_1 X0)))$$