

t16\_rvsum\_2 (TMM-  
nDgSM2PV4G669WCBycsad36UohS81Bfj)

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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  $k5\_rvsum\_2 : \iota \Rightarrow \iota$  be given. Let  $k7\_rvsum\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k45\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k30\_valued\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \Rightarrow \\ & (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_valued\_0 \\ & X1)))) \Rightarrow (k45\_valued\_1 X0 X1 = k30\_valued\_1 (k45\_valued\_1 X1 X0)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (( \\ & v1\_finseq\_1 X0) \wedge (v1\_valued\_0 X0)))) \wedge ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 \\ & X1) \wedge ((v1\_finseq\_1 X1) \wedge (v1\_valued\_0 X1))))) \Rightarrow (k7\_rvsum\_2 X0 X1 = \\ & k45\_valued\_1 X0 X1) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finseq\_1 X0) \wedge (v1\_valued\_0 X0)))) \Rightarrow (k5\_rvsum\_2 X0 = k30\_valued\_1 X0) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (( \\ & v1\_valued\_0 X0) \wedge (v1\_finseq\_1 X0)))) \wedge ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 \\ & X1) \wedge ((v1\_valued\_0 X1) \wedge (v1\_finseq\_1 X1))))) \Rightarrow ((v1\_relat\_1 (k45\_valued\_1 \\ & X0 X1)) \wedge ((v1\_funct\_1 (k45\_valued\_1 X0 X1)) \wedge (v1\_finseq\_1 (k45\_valued\_1 \\ & X0 X1)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 \\ & X0))) \wedge ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_valued\_0 X1)))) \Rightarrow \\ & ((v1\_relat\_1 (k45\_valued\_1 X0 X1)) \wedge ((v1\_funct\_1 (k45\_valued\_1 \\ & X0 X1)) \wedge (v1\_valued\_0 (k45\_valued\_1 X0 X1)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (&((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 \\ X0))) \wedge ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_valued\_0 X1)))) \Rightarrow & \\ ((v1\_relat\_1 (k45\_valued\_1 X0 X1)) \wedge (v1\_funct\_1 (k45\_valued\_1 & \\ X0 X1))) & \end{aligned} \quad (6)$$

**Theorem 1**

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