

t89\_valued\_2

(TMX3FTA4mk8WBDVjcrYxg9KATKEtNkpBCyZ)

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Let  $v1\_valued\_2 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  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  $k84\_valued\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_valued\_2 : \iota \Rightarrow \iota$  be given. Let  $k1\_valued\_2 : \iota \Rightarrow \iota$  be given. Let  $k79\_valued\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k45\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k18\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k83\_valued\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k78\_valued\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_valued\_2 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \Rightarrow \\ & \quad (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_valued\_0 \\ & \quad X1))) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 X2) \wedge (v1\_valued\_0 \\ & \quad X2)))) \Rightarrow (k45\_valued\_1 (k18\_valued\_1 X0 X1) (k18\_valued\_1 X0 X2) = \\ & \quad k18\_valued\_1 X0 (k45\_valued\_1 X1 X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & ((v1\_valued\_2 X2) \wedge ((v1\_valued\_2 X3) \wedge (((v1\_funct\_1 X4) \wedge (m1\_subset\_1 \\ & X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X2)))) \wedge ((v1\_funct\_1 X5) \wedge (m1\_subset\_1 \\ & X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X3)))))))) \Rightarrow (k84\_valued\_2 X0 X1 \\ & X2 X3 X4 X5 = k83\_valued\_2 X2 X3 X4 X5) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & ((v1\_valued\_2 X2) \wedge ((v1\_valued\_2 X3) \wedge (((v1\_funct\_1 X4) \wedge (m1\_subset\_1 \\ & X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X2)))) \wedge ((v1\_funct\_1 X5) \wedge (m1\_subset\_1 \\ & X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X3)))))))) \Rightarrow (k79\_valued\_2 X0 X1 \\ & X2 X3 X4 X5 = k78\_valued\_2 X2 X3 X4 X5) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k3\_xboole\_0 X0 (k3\_xboole\_0 X1 X2) = k3\_xboole\_0 (k3\_xboole\_0 X0 X1) (k3\_xboole\_0 X0 X2) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v7\_valued\_2 X0)))\Rightarrow(v1\_valued\_0 (k1\_funct\_1 X0 X1)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v7\_valued\_2 X0)))\Rightarrow((v1\_relat\_1 (k1\_funct\_1 X0 X1))\wedge(v1\_funct\_1 (k1\_funct\_1 X0 X1))) \quad (6)$$

Assume the following.

$$\forall X0.v1\_valued\_2 (k2\_valued\_2 X0) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((v1\_valued\_2 X2)\wedge((v1\_valued\_2 X3)\wedge(((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X2))))\wedge((v1\_funct\_1 X5)\wedge(m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X3)))))))\Rightarrow((v1\_funct\_1 (k84\_valued\_2 X0 X1 X2 X3 X4 X5))\wedge(m1\_subset\_1 (k84\_valued\_2 X0 X1 X2 X3 X4 X5) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k3\_xboole\_0 X0 X1) (k2\_valued\_2 (k3\_xboole\_0 (k1\_valued\_2 X2) (k1\_valued\_2 X3))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v1\_valued\_2 X0)\wedge \\ & ((v1\_valued\_2 X1)\wedge(((v1\_relat\_1 X2)\wedge((v5\_relat\_1 X2 X0)\wedge(v1\_funct\_1 X2 X2))))\wedge((v1\_relat\_1 X3)\wedge((v5\_relat\_1 X3 X1)\wedge(v1\_funct\_1 X3))))\Rightarrow \\ & ((v1\_relat\_1 (k83\_valued\_2 X0 X1 X2 X3))\wedge(v1\_funct\_1 (k83\_valued\_2 X0 X1 X2 X3))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((v1\_valued\_2 X2)\wedge((v1\_valued\_2 X3)\wedge(((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X2))))\wedge((v1\_funct\_1 X5)\wedge(m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X3)))))))\Rightarrow((v1\_funct\_1 (k79\_valued\_2 X0 X1 X2 X3 X4 X5))\wedge(m1\_subset\_1 (k79\_valued\_2 X0 X1 X2 X3 X4 X5) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k3\_xboole\_0 X0 X1) (k2\_valued\_2 (k3\_xboole\_0 (k1\_valued\_2 X2) (k1\_valued\_2 X3))))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(X2 = k3\_xboole\_0 X0 X1) \Leftrightarrow (\forall X3. \\ (X3 \in X2) \Leftrightarrow ((X3 \in X0) \wedge (X3 \in X1))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_valued\_2 X0) \Rightarrow (\forall X1.(v1\_valued\_2 X1) \Rightarrow (\forall X2. \\ ((v1\_relat\_1 X2) \wedge ((v5\_relat\_1 X2 X0) \wedge (v1\_funct\_1 X2))) \Rightarrow (\forall X3. \\ ((v1\_relat\_1 X3) \wedge ((v5\_relat\_1 X3 X1) \wedge (v1\_funct\_1 X3))) \Rightarrow (\forall X4. \\ ((v1\_relat\_1 X4) \wedge (v1\_funct\_1 X4)) \Rightarrow ((X4 = k83\_valued\_2 X0 X1 X2 \\ X3) \Leftrightarrow ((k9\_xtuple\_0 X4 = k3\_xboole\_0 (k9\_xtuple\_0 X2) (k9\_xtuple\_0 \\ X3)) \wedge (\forall X5.(X5 \in k9\_xtuple\_0 X4) \Rightarrow (k1\_funct\_1 X4 X5 = k18\_valued\_1 \\ (k1\_funct\_1 X2 X5) (k1\_funct\_1 X3 X5)))))))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_valued\_2 X0) \Rightarrow (\forall X1.(v1\_valued\_2 X1) \Rightarrow (\forall X2. \\ ((v1\_relat\_1 X2) \wedge ((v5\_relat\_1 X2 X0) \wedge (v1\_funct\_1 X2))) \Rightarrow (\forall X3. \\ ((v1\_relat\_1 X3) \wedge ((v5\_relat\_1 X3 X1) \wedge (v1\_funct\_1 X3))) \Rightarrow (\forall X4. \\ ((v1\_relat\_1 X4) \wedge (v1\_funct\_1 X4)) \Rightarrow ((X4 = k78\_valued\_2 X0 X1 X2 \\ X3) \Leftrightarrow ((k9\_xtuple\_0 X4 = k3\_xboole\_0 (k9\_xtuple\_0 X2) (k9\_xtuple\_0 \\ X3)) \wedge (\forall X5.(X5 \in k9\_xtuple\_0 X4) \Rightarrow (k1\_funct\_1 X4 X5 = k45\_valued\_1 \\ (k1\_funct\_1 X2 X5) (k1\_funct\_1 X3 X5)))))))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 X1))) \Rightarrow ((v4\_relat\_1 X2 X0) \wedge (v5\_relat\_1 X2 X1)) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_valued\_2 X0) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge (( \\ v5\_relat\_1 X1 X0) \wedge (v1\_funct\_1 X1))) \Rightarrow ((v1\_relat\_1 X1) \wedge ((v5\_relat\_1 \\ X1 X0) \wedge ((v1\_funct\_1 X1) \wedge (v7\_valued\_2 X1)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \end{aligned} \quad (16)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(v1\_valued\_2 X3)\Rightarrow \\ & (\forall X4.(v1\_valued\_2 X4)\Rightarrow(\forall X5.(v1\_valued\_2 X5)\Rightarrow( \\ & \forall X6.((v1\_funct\_1 X6)\wedge(m1\_subset\_1 X6 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X3))))\Rightarrow(\forall X7.((v1\_funct\_1 X7)\wedge(m1\_subset\_1 X7 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X1 X4))))\Rightarrow(\forall X8.((v1\_funct\_1 X8)\wedge(m1\_subset\_1 \\ & X8 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X2 X5))))\Rightarrow(k84\_valued\_2 X0 (k3\_xboole\_0 \\ & X1 X2) X3 (k2\_valued\_2 (k3\_xboole\_0 (k1\_valued\_2 X4) (k1\_valued\_2 \\ & X5))) X6 (k79\_valued\_2 X1 X2 X4 X5 X7 X8) = k79\_valued\_2 (k3\_xboole\_0 \\ & X0 X1) (k3\_xboole\_0 X0 X2) (k2\_valued\_2 (k3\_xboole\_0 (k1\_valued\_2 \\ & X3) (k1\_valued\_2 X4))) (k2\_valued\_2 (k3\_xboole\_0 (k1\_valued\_2 \\ & X3) (k1\_valued\_2 X5))) (k84\_valued\_2 X0 X1 X3 X4 X6 X7) (k84\_valued\_2 \\ & X0 X2 X3 X5 X6 X8))))))))) \end{aligned}$$