

## t33\_funct\_9

(TMSuiNrSkJ6LYBuf7xhVT87pjMMo82Xo4Lz)

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Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_int\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_9 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k26\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k16\_sin\_cos : \iota$  be given. Let  $k8\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k32\_sin\_cos : \iota$  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  $k7\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k24\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & ((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 X2) \wedge (v3\_valued\_0 X2))) \Rightarrow ((v1\_funct\_9 \\ & X2 X0) \Rightarrow (v1\_funct\_9 (k7\_valued\_1 X2 X1) X0)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & ((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 X2) \wedge (v3\_valued\_0 X2))) \Rightarrow ((v1\_funct\_9 \\ & X2 X0) \Rightarrow (v1\_funct\_9 (k24\_valued\_1 X2 X1) X0)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0 X0) \wedge (v1\_int\_1 X0)) \Rightarrow (v1\_funct\_9 k16\_sin\_cos (k8\_real\_1 (k8\_real\_1 np\_2 k32\_sin\_cos) X0)) \quad (3)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 np\_2) \wedge (m2\_subset\_1 np\_2 k1\_numbers k5\_numbers)) \wedge \\ & ((m1\_subset\_1 np\_2 k5\_numbers) \wedge (m1\_subset\_1 np\_2 k1\_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v3\_membered\ X1)\wedge \\ & (((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1 \\ & X0\ X1))))\wedge(v1\_xreal\_0\ X3)))\Rightarrow(k9\_valued\_1\ X0\ X1\ X2\ X3 = k7\_valued\_1 \\ & X2\ X3) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v3\_membered\ X1)\wedge \\ & (((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1 \\ & X0\ X1))))\wedge(v1\_xreal\_0\ X3)))\Rightarrow(k26\_valued\_1\ X0\ X1\ X2\ X3 = k24\_valued\_1 \\ & X2\ X3) \end{aligned} \tag{6}$$

Assume the following.

$$v3\_membered\ k1\_numbers \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((m1\_subset\_1\ X0\ k1\_numbers)\wedge(v1\_xreal\_0 \\ & X1))\Rightarrow(m1\_subset\_1\ (k8\_real\_1\ X0\ X1)\ k1\_numbers) \end{aligned} \tag{8}$$

Assume the following.

$$m1\_subset\_1\ k32\_sin\_cos\ k1\_numbers \tag{9}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v3\_membered\ X1)\wedge \\ & (((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1 \\ & X0\ X1))))\wedge(v1\_xreal\_0\ X3)))\Rightarrow(((v1\_funct\_1\ (k26\_valued\_1\ X0\ X1 \\ & X2\ X3))\wedge(m1\_subset\_1\ (k26\_valued\_1\ X0\ X1\ X2\ X3)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1 \\ & X0\ k1\_numbers)))))) \end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned} & (v1\_funct\_1\ k16\_sin\_cos)\wedge((v1\_funct\_2\ k16\_sin\_cos\ k1\_numbers \\ & k1\_numbers)\wedge(m1\_subset\_1\ k16\_sin\_cos\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1 \\ & k1\_numbers\ k1\_numbers)))) \end{aligned} \tag{11}$$

Assume the following.

$$\forall X0.(v1\_int\_1\ X0)\Rightarrow(v1\_xreal\_0\ X0) \tag{12}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(v1\_xreal\_0\ X0) \tag{13}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v1\_relat\_1 X2) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.(v3\_membered X1)\Rightarrow(\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v3\_valued\_0 X2)) \quad (15)$$

Assume the following.

$$\forall X0.(v3\_membered X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 X0)\Rightarrow(v1\_xreal\_0 X1)) \quad (16)$$

**Theorem 1**

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(\forall X1.(v1\_xreal\_0 X1)\Rightarrow(\forall X2. ((\neg v1\_xboole\_0 X2)\wedge(v1\_int\_1 X2))\Rightarrow(v1\_funct\_9 (k9\_valued\_1 k1\_numbers k1\_numbers (k26\_valued\_1 k1\_numbers k1\_numbers k16\_sin\_cos X1) X0) (k8\_real\_1 (k8\_real\_1 np\_2 k32\_sin\_cos) X2))))$$