

t23_integr15 (TMaCVkjKE- coiexK4b94BGG1zuMuUpKVTSyU)

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Let $v7_ordinal1 : \iota \Rightarrow o$ 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 $k1_euclid : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_integr15 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_euclid : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k24_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_valued_2 : \iota \Rightarrow o$ be given. Let $k43_valued_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k41_valued_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_valued_2 : \iota \Rightarrow o$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.((v7_ordinal1 X0) \wedge ((m1_subset_1 X1 (k1_euclid X0)) \wedge (v1_xreal_0 X2))) \Rightarrow (k9_euclid X0 X1 X2 = k24_valued_1 X1 X2) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v3_valued_2 X1) \wedge (((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \wedge (v1_xreal_0 X3))) \Rightarrow (k43_valued_2 X0 X1 X2 X3 = k41_valued_2 X1 X2 X3) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (k1_relset_1 X0 X1 = k9_xtuple_0 X1) \tag{3}$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (v3_valued_2 (k1_euclid X0)) \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v7_ordinal1\ X0)\wedge \\ & ((v1_xreal_0\ X1)\wedge((v1_funct_1\ X3)\wedge(m1_subset_1\ X3\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ X2\ (k1_euclid\ X0))))))\Rightarrow((v1_funct_1\ (k9_integr15 \\ & X0\ X1\ X2\ X3))\wedge(m1_subset_1\ (k9_integr15\ X0\ X1\ X2\ X3)\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ X2\ (k1_euclid\ X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1_relat_1\ X1)\wedge((v5_relat_1 \\ & X1\ X0)\wedge(v1_funct_1\ X1)))\Rightarrow(m1_subset_1\ (k7_partfun1\ X0\ X1\ X2)\ X0) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1_valued_2\ X0)\wedge((v1_relat_1 \\ & X1)\wedge((v5_relat_1\ X1\ X0)\wedge(v1_funct_1\ X1)))\wedge(v1_xcmplx_0\ X2))\Rightarrow \\ & ((v1_relat_1\ (k41_valued_2\ X0\ X1\ X2))\wedge(v1_funct_1\ (k41_valued_2 \\ & X0\ X1\ X2))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1\ X1)\wedge((v5_relat_1\ X1\ X0)\wedge \\ & v1_funct_1\ X1))\Rightarrow(\forall X2.(X2 \in k9_xtuple_0\ X1)\Rightarrow(k7_partfun1 \\ & X0\ X1\ X2 = k1_funct_1\ X1\ X2)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_valued_2\ X0)\Rightarrow(\forall X1.((v1_relat_1\ X1)\wedge((\\ & v5_relat_1\ X1\ X0)\wedge(v1_funct_1\ X1)))\Rightarrow(\forall X2.(v1_xcmplx_0 \\ & X2)\Rightarrow(\forall X3.((v1_relat_1\ X3)\wedge(v1_funct_1\ X3))\Rightarrow((X3 = k41_valued_2 \\ & X0\ X1\ X2)\Leftrightarrow((k9_xtuple_0\ X3 = k9_xtuple_0\ X1)\wedge(\forall X4.(X4 \in k9_xtuple_0 \\ & X3)\Rightarrow(k1_funct_1\ X3\ X4 = k24_valued_1\ (k1_funct_1\ X1\ X4)\ X2)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7_ordinal1\ X0)\Rightarrow(\forall X1.(v1_xreal_0\ X1)\Rightarrow(\forall X2. \\ & \forall X3.((v1_funct_1\ X3)\wedge(m1_subset_1\ X3\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ & X2\ (k1_euclid\ X0))))))\Rightarrow(k9_integr15\ X0\ X1\ X2\ X3 = k43_valued_2\ X2 \\ & (k1_euclid\ X0)\ X3\ X1)) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.(v3_valued_2\ X0)\Rightarrow(v1_valued_2\ X0) \quad (11)$$

Assume the following.

$$\forall X0.(v1_xreal_0\ X0)\Rightarrow(v1_xcmplx_0\ X0) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow((v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1)) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \quad (14)$$

Theorem 1

$$\begin{aligned} & \forall X0.(v7_ordinal1 X0)\Rightarrow(\forall X1.\forall X2.\forall X3. \\ & ((v1_funct_1 X3)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 \\ & (k1_euclid X0))))\Rightarrow(\forall X4.(v1_xreal_0 X4)\Rightarrow((X2 \in k1_relset_1 \\ & X1 (k9_integr15 X0 X4 X1 X3))\Rightarrow(k7_partfun1 (k1_euclid X0) (k9_integr15 \\ & X0 X4 X1 X3) X2 = k9_euclid X0 (k7_partfun1 (k1_euclid X0) X3 X2) X4)))) \end{aligned}$$