

t17_taylor_1 (TM-
FVsqWQ6Z5Z2Hpx1QJpu4YfU9cm3eLANng)

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Let $r2_fdiff_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_partfun2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $k24_sin_cos : \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v2_funct_1 : \iota \Rightarrow o$ 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 $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_subset_1 : \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_funct_1 : \iota \Rightarrow \iota$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_limfunct : \iota \Rightarrow \iota$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((v1_funct_1 X0) \wedge ((v2_funct_1 X0) \wedge (m1_subset_1 X0 \\
& (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))))) \Rightarrow (((r1_tarski \\
& (k2_subset_1 k1_numbers) (k1_relset_1 k1_numbers X0)) \wedge (r2_fdiff_1 \\
& X0 (k2_subset_1 k1_numbers))) \Rightarrow (((\exists X1. (m1_subset_1 X1 \\
& k1_numbers) \wedge (r1_xxreal_0 (k1_fdiff_1 X0 X1) k6_numbers)) \wedge (\exists X1. \\
& (m1_subset_1 X1 k1_numbers) \wedge (r1_xxreal_0 k6_numbers (k1_fdiff_1 \\
& X0 X1)))) \vee ((v2_funct_1 X0) \wedge ((r2_fdiff_1 (k2_partfun2 k1_numbers \\
& k1_numbers X0) (k1_relset_1 k1_numbers (k2_partfun2 k1_numbers \\
& k1_numbers X0))) \wedge (\forall X1. (m1_subset_1 X1 k1_numbers) \Rightarrow ((\\
& X1 \in k1_relset_1 k1_numbers (k2_partfun2 k1_numbers k1_numbers \\
& X0)) \Rightarrow (k1_fdiff_1 (k2_partfun2 k1_numbers k1_numbers X0) X1 = k10_real_1 \\
& np_1 (k1_fdiff_1 X0 (k1_seq_1 (k2_partfun2 k1_numbers k1_numbers \\
& X0) X1))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v1_funct_1 X1))\Rightarrow(((v2_funct_1 X1)\wedge(X0 \in k10_xtuple_0 X1))\Rightarrow((X0 = k1_funct_1 X1 (k1_funct_1 (k2_funct_1 X1) X0))\wedge(X0 = k1_funct_1 (k3_relat_1 (k2_funct_1 X1) X1) X0)))) \quad (2)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow((v2_funct_1 X0)\Rightarrow((k10_xtuple_0 X0 = k9_xtuple_0 (k2_funct_1 X0))\wedge(k9_xtuple_0 X0 = k10_xtuple_0 (k2_funct_1 X0)))) \quad (3)$$

Assume the following.

$$(v2_funct_1 k24_sin_cos)\wedge((r2_fdiff_1 k24_sin_cos k1_numbers)\wedge((r2_fdiff_1 k24_sin_cos (k2_subset_1 k1_numbers))\wedge(\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(k1_fdiff_1 k24_sin_cos X0 = k1_seq_1 k24_sin_cos X0))\wedge(\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(\neg r1_xreal_0 (k1_fdiff_1 k24_sin_cos X0) k6_numbers))\wedge((k1_relset_1 k1_numbers k24_sin_cos = k2_subset_1 k1_numbers)\wedge((k1_relset_1 k1_numbers k24_sin_cos = k2_subset_1 k1_numbers)\wedge(k2_relset_1 k1_numbers k24_sin_cos = k3_limfunc1 k6_numbers)))))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.r1_tarski X0 X0 \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_funct_1 X2)\wedge((v2_funct_1 X2)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\Rightarrow(k2_partfun2 X0 X1 X2 = k2_funct_1 X2) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v3_valued_0 X0)))\Rightarrow(k1_seq_1 X0 X1 = k1_funct_1 X0 X1) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v4_relat_1 X1 X0))\Rightarrow(k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (8)$$

Assume the following.

$$(v1_funct_1 k24_sin_cos)\wedge((v2_funct_1 k24_sin_cos)\wedge(v1_funct_2 k24_sin_cos k1_numbers k1_numbers)) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_funct_1 X2) \wedge ((v2_funct_1 \\ & X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((v1_funct_1 \\ & (k2_partfun2 X0 X1 X2)) \wedge (m1_subset_1 (k2_partfun2 X0 X1 X2) (k1_zfmisc_1 \\ & (k2_zfmisc_1 X1 X0)))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow ((v1_relat_1 (k2_funct_1 X0)) \wedge (v1_funct_1 (k2_funct_1 X0))) \quad (11)$$

Assume the following.

$$\begin{aligned} & (v1_funct_1 k24_sin_cos) \wedge ((v1_funct_2 k24_sin_cos k1_numbers \\ & k1_numbers) \wedge (m1_subset_1 k24_sin_cos (k1_zfmisc_1 (k2_zfmisc_1 \\ & k1_numbers k1_numbers)))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v3_valued_0 X0))) \Rightarrow (m1_subset_1 (k1_seq_1 X0 X1) k1_numbers) \quad (13)$$

Assume the following.

$$\forall X0. k2_subset_1 X0 = X0 \quad (14)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge (v5_relat_1 X0 k1_numbers)) \Rightarrow ((v1_relat_1 X0) \wedge (v3_valued_0 X0)) \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \quad (17)$$

Theorem 1

$$\begin{aligned} & (r2_fdiff_1 (k2_partfun2 k1_numbers k1_numbers k24_sin_cos) \\ & (k1_relset_1 k1_numbers (k2_partfun2 k1_numbers k1_numbers k24_sin_cos))) \wedge \\ & (\forall X0. (v1_xreal_0 X0) \Rightarrow ((X0 \in k1_relset_1 k1_numbers (k2_partfun2 \\ & k1_numbers k1_numbers k24_sin_cos)) \Rightarrow (k1_fdiff_1 (k2_partfun2 \\ & k1_numbers k1_numbers k24_sin_cos) X0 = k10_real_1 np_1 X0))) \end{aligned}$$