

t19_fdifff_5

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Let $v3_rcomp_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k3_taylor_1 : \iota$ be given. Let $r2_fdiff_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_fdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_partfun2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k24_sin_cos : \iota$ be given. Let $v2_funct_1 : \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_limfunct : \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. \neg (X0 \in X1) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 X2)) \wedge (v1_xboole_0 X2)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((v3_rcomp_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 k1_numbers))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow (((r2_fdiff_1 X2 X0) \wedge (r1_tarski X1 X0)) \Rightarrow (r2_fdiff_1 X2 X1))) \quad (4)$$

Assume the following.

$$\begin{aligned}
& (r2_relset_1 \ k1_numbers \ k1_numbers \ k3_taylor_1 \ (k2_partfun2 \\
& \ k1_numbers \ k1_numbers \ k24_sin_cos)) \wedge ((v2_funct_1 \ k3_taylor_1) \wedge \\
& ((k1_relset_1 \ k1_numbers \ k3_taylor_1 = k3_limfunc1 \ k6_numbers) \wedge \\
& ((k2_relset_1 \ k1_numbers \ k3_taylor_1 = k1_numbers) \wedge ((r2_fdiff_1 \\
& \ k3_taylor_1 \ (k3_limfunc1 \ k6_numbers)) \wedge ((\forall X0.(m1_subset_1 \\
& \ X0 \ k1_numbers) \Rightarrow ((\neg r1_xreal_0 \ X0 \ k6_numbers) \Rightarrow (r1_fdiff_1 \ k3_taylor_1 \\
& \ X0))) \wedge ((\forall X0.(m2_subset_1 \ X0 \ k1_numbers \ (k3_limfunc1 \ k6_numbers)) \Rightarrow \\
& \ (k1_fdiff_1 \ k3_taylor_1 \ X0 = k10_real_1 \ np_1 \ X0)) \wedge (\forall X0. \\
& \ (m2_subset_1 \ X0 \ k1_numbers \ (k3_limfunc1 \ k6_numbers)) \Rightarrow (\neg r1_xreal_0 \\
& \ (k1_fdiff_1 \ k3_taylor_1 \ X0) \ k6_numbers))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((\neg v1_xboole_0 \ X0) \wedge ((\neg v1_xboole_0 \ X1) \wedge \\
& \ (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ X0)))) \Rightarrow (\forall X2. (m2_subset_1 \\
& \ X2 \ X0 \ X1) \Leftrightarrow (m1_subset_1 \ X2 \ X1))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((v1_relat_1 \ X1) \wedge (v4_relat_1 \ X1 \ X0)) \Rightarrow (\\
& \ k1_relset_1 \ X0 \ X1 = k9_xtuple_0 \ X1)
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& (v1_funct_1 \ k3_taylor_1) \wedge (m1_subset_1 \ k3_taylor_1 \ (k1_zfmisc_1 \\
& \ (k2_zfmisc_1 \ k1_numbers \ k1_numbers)))
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((v1_funct_1 \ X0) \wedge (m1_subset_1 \ X0 \ (k1_zfmisc_1 \\
& \ (k2_zfmisc_1 \ k1_numbers \ k1_numbers)))) \Rightarrow ((v1_funct_1 \ (k2_fdiff_1 \\
& \ X0 \ X1)) \wedge (m1_subset_1 \ (k2_fdiff_1 \ X0 \ X1) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\
& \ k1_numbers \ k1_numbers))))
\end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((v1_relat_1 \ X1) \wedge (v4_relat_1 \ X1 \ X0)) \Rightarrow (\\
& \ m1_subset_1 \ (k1_relset_1 \ X0 \ X1) \ (k1_zfmisc_1 \ X0))
\end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((v1_funct_1 \ X0) \wedge (m1_subset_1 \ X0 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\
& \ k1_numbers \ k1_numbers)))) \Rightarrow (\forall X1. (r2_fdiff_1 \ X0 \ X1) \Rightarrow (\forall X2. \\
& \ ((v1_funct_1 \ X2) \wedge (m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k1_numbers \\
& \ k1_numbers)))) \Rightarrow ((X2 = k2_fdiff_1 \ X0 \ X1) \Leftrightarrow ((k1_relset_1 \ k1_numbers \\
& \ X2 = X1) \wedge (\forall X3. (m1_subset_1 \ X3 \ k1_numbers) \Rightarrow ((X3 \in X1) \Rightarrow (k1_seq_1 \\
& \ X2 \ X3 = k1_fdiff_1 \ X0 \ X3))))))
\end{aligned} \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow((v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1)) \quad (12)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0))\Rightarrow(v1_xboole_0 X1)) \quad (13)$$

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

$$\forall X0.((v3_rcomp_1 X0)\wedge(m1_subset_1 X0 (k1_zfmisc_1 k1_numbers)))\Rightarrow((r1_tarski X0 (k9_xtuple_0 k3_taylor_1))\Rightarrow((r2_fdiff_1 k3_taylor_1 X0)\wedge(\forall X1.(m1_subset_1 X1 k1_numbers)\Rightarrow((X1 \in X0)\Rightarrow(k1_seq_1 (k2_fdiff_1 k3_taylor_1 X0) X1 = k10_real_1 np_1 X1))))))$$