

t45_fdifff_7 (TMLxSCmJN-
shY3b7jHVDuW6oS86r74hQQ6ZG)

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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 $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_reiset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k20_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k24_sin_cos : \iota$ be given. Let $k19_sin_cos : \iota$ 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 $k8_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16_sin_cos : \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_real_1 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_funct_1 : \iota \Rightarrow o$ be given. Let $k2_subset_1 : \iota \Rightarrow \iota$ be given. Let $r1_xreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k2_reiset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_limfunct : \iota \Rightarrow \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $k6_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v1_int_1 : \iota \Rightarrow o$ be given. Let $v1_valued_0 : \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow ((r2_fdiff_1 k19_sin_cos k1_numbers) \wedge (k1_fdiff_1 k19_sin_cos X0 = k1_real_1 (k1_seq_1 k16_sin_cos X0))) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((v3_rcomp_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 k1_numbers))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow (((r2_fdiff_1 X2 X0) \wedge (r1_tarski X1 X0)) \Rightarrow (r2_fdiff_1 X2 X1))) \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v3_rcomp_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 k1_numbers))) \Rightarrow \\
& (\forall X1.((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k1_numbers k1_numbers)))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge (m1_subset_1 \\
& X2 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow (((r1_tarski \\
& X0 (k1_relset_1 k1_numbers (k20_valued_1 k1_numbers k1_numbers \\
& k1_numbers X1 X2))) \wedge ((r2_fdiff_1 X1 X0) \wedge (r2_fdiff_1 X2 X0))) \Rightarrow \\
& ((r2_fdiff_1 (k20_valued_1 k1_numbers k1_numbers k1_numbers \\
& X1 X2) X0) \wedge (\forall X3.(m1_subset_1 X3 k1_numbers) \Rightarrow ((X3 \in X0) \Rightarrow \\
& (k1_seq_1 (k2_fdiff_1 (k20_valued_1 k1_numbers k1_numbers k1_numbers \\
& X1 X2) X0) X3 = k7_real_1 (k8_real_1 (k1_seq_1 X2 X3) (k1_fdiff_1 \\
& X1 X3)) (k8_real_1 (k1_seq_1 X1 X3) (k1_fdiff_1 X2 X3)))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& (v2_funct_1 k24_sin_cos) \wedge ((r2_fdiff_1 k24_sin_cos k1_numbers) \wedge \\
& ((r2_fdiff_1 k24_sin_cos (k2_subset_1 k1_numbers)) \wedge ((\forall X0. \\
& (m1_subset_1 X0 k1_numbers) \Rightarrow (k1_fdiff_1 k24_sin_cos X0 = k1_seq_1 \\
& k24_sin_cos X0)) \wedge ((\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\\
& \neg r1_xreal_0 (k1_fdiff_1 k24_sin_cos X0) k6_numbers)) \wedge ((k1_relset_1 \\
& k1_numbers k24_sin_cos = k2_subset_1 k1_numbers) \wedge ((k1_relset_1 \\
& k1_numbers k24_sin_cos = k2_subset_1 k1_numbers) \wedge (k2_relset_1 \\
& k1_numbers k24_sin_cos = k3_limfunc1 k6_numbers))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. ((v1_xcmplx_0 X0) \wedge ((v1_xcmplx_0 \\
& X1) \wedge (v1_xcmplx_0 X2))) \Rightarrow (k3_xcmplx_0 (k2_xcmplx_0 X0 X1) X2 = k2_xcmplx_0 \\
& (k3_xcmplx_0 X0 X2) (k3_xcmplx_0 X1 X2))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((v1_xcmplx_0 X0) \wedge (v1_xcmplx_0 X1)) \Rightarrow (\\
& k2_xcmplx_0 X0 (k4_xcmplx_0 X1) = k6_xcmplx_0 X0 X1)
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((m1_subset_1 X0 k1_numbers) \wedge (v1_xreal_0 \\
& X1)) \Rightarrow (k9_real_1 X0 X1 = k6_xcmplx_0 X0 X1)
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((m1_subset_1 X0 k1_numbers) \wedge (v1_xreal_0 \\
& X1)) \Rightarrow (k8_real_1 X0 X1 = k3_xcmplx_0 X0 X1)
\end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((m1_subset_1 X0 k1_numbers) \wedge (v1_xreal_0 \\
& X1)) \Rightarrow (k7_real_1 X0 X1 = k2_xcmplx_0 X0 X1)
\end{aligned} \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v3_valued_0 X0)))\Rightarrow(k1_seq_1 X0 X1 = k1_funct_1 X0 X1) \quad (11)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(k1_real_1 X0 = k4_xcmplx_0 X0) \quad (12)$$

Assume the following.

$$\exists X0.(m1_subset_1 X0 k1_numbers)\wedge((v1_xxreal_0 X0)\wedge((v1_xcmplx_0 X0)\wedge((v1_xreal_0 X0)\wedge(v1_int_1 X0)))) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v3_valued_0 X0)))\Rightarrow(v1_xreal_0 (k1_funct_1 X0 X1)) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_valued_0 X0)))\Rightarrow(v1_xcmplx_0 (k1_funct_1 X0 X1)) \quad (15)$$

Assume the following.

$$v3_membered k1_numbers \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k1_numbers)\wedge(v1_xreal_0 X1))\Rightarrow(m1_subset_1 (k8_real_1 X0 X1) k1_numbers) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k1_numbers)\wedge(v1_xreal_0 X1))\Rightarrow(m1_subset_1 (k7_real_1 X0 X1) k1_numbers) \quad (18)$$

Assume the following.

$$(v1_funct_1 k24_sin_cos)\wedge((v1_funct_2 k24_sin_cos k1_numbers k1_numbers)\wedge(m1_subset_1 k24_sin_cos (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v3_valued_0 X0)))\Rightarrow(m1_subset_1 (k1_seq_1 X0 X1) k1_numbers) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_funct_1 X0)\wedge(m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers))))\wedge(v1_xreal_0 X1))\Rightarrow(m1_subset_1 (k1_fdiff_1 X0 X1) k1_numbers) \quad (21)$$

Assume the following.

$$(v1_funct_1\ k19_sin_cos)\wedge((v1_funct_2\ k19_sin_cos\ k1_numbers\ k1_numbers)\wedge(m1_subset_1\ k19_sin_cos\ (k1_zfmisc_1\ (k2_zfmisc_1\ k1_numbers\ k1_numbers)))) \quad (22)$$

Assume the following.

$$(v1_funct_1\ k16_sin_cos)\wedge((v1_funct_2\ k16_sin_cos\ k1_numbers\ k1_numbers)\wedge(m1_subset_1\ k16_sin_cos\ (k1_zfmisc_1\ (k2_zfmisc_1\ k1_numbers\ k1_numbers)))) \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1\ X0\ k1_numbers)\wedge(v1_xreal_0\ X1))\Rightarrow(k8_real_1\ X0\ X1 = k8_real_1\ X1\ X0) \quad (24)$$

Assume the following.

$$\forall X0.(v3_membered\ X0)\Rightarrow(v1_membered\ X0) \quad (25)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1)))\Rightarrow(v1_relat_1\ X2) \quad (26)$$

Assume the following.

$$\forall X0.\forall X1.(v3_membered\ X1)\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1)))\Rightarrow(v3_valued_0\ X2)) \quad (27)$$

Assume the following.

$$\forall X0.\forall X1.(v1_membered\ X1)\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1)))\Rightarrow(v1_valued_0\ X2)) \quad (28)$$

Assume the following.

$$\forall X0.(v3_membered\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ X0)\Rightarrow(v1_xreal_0\ X1)) \quad (29)$$

Assume the following.

$$\forall X0.(v1_membered\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ X0)\Rightarrow(v1_xcmplx_0\ X1)) \quad (30)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v3_rcomp_1\ X0)\wedge(m1_subset_1\ X0\ (k1_zfmisc_1\ k1_numbers)))\Rightarrow \\ & ((r1_tarski\ X0\ (k1_relset_1\ k1_numbers\ (k20_valued_1\ k1_numbers\ k1_numbers\ k1_numbers\ k24_sin_cos\ k19_sin_cos)))\Rightarrow((r2_fdiff_1 \\ & (k20_valued_1\ k1_numbers\ k1_numbers\ k1_numbers\ k24_sin_cos\ k19_sin_cos) \\ & X0)\wedge(\forall X1.(m1_subset_1\ X1\ k1_numbers)\Rightarrow((X1 \in X0)\Rightarrow(k1_seq_1 \\ & (k2_fdiff_1\ (k20_valued_1\ k1_numbers\ k1_numbers\ k1_numbers\ k24_sin_cos \\ & k19_sin_cos)\ X0)\ X1 = k8_real_1\ (k1_seq_1\ k24_sin_cos\ X1)\ (k9_real_1 \\ & (k1_seq_1\ k19_sin_cos\ X1)\ (k1_seq_1\ k16_sin_cos\ X1)))))) \end{aligned}$$