

t21_weierstr

(TMXBs5iVbNCsJhaqetPSYTrF4DLUQF6vtBk)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v6_metric_1 : \iota \Rightarrow o$ be given. Let $v7_metric_1 : \iota \Rightarrow o$ be given. Let $v8_metric_1 : \iota \Rightarrow o$ be given. Let $v9_metric_1 : \iota \Rightarrow o$ be given. Let $l1_metric_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_pcomps_1 : \iota \Rightarrow \iota$ be given. Let $v2_compts_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k1_numbers : \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_weierstr : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k18_complex1 : \iota \Rightarrow \iota$ be given. Let $k9_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_metric_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_weierstr : \iota \Rightarrow \iota$ be given. Let $k7_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_topmetr : \iota$ be given. Let $k4_weierstr : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v7_metric_1 \\
& X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \Rightarrow \\
& (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 \\
& X0)))) \Rightarrow ((v2_compts_1 X1 (k3_pcomps_1 X0)) \Rightarrow ((X1 = k1_xboole_0) \vee \\
& (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 \\
& X3 (u1_struct_0 X0)) \Rightarrow (r1_xxreal_0 (k18_complex1 (k9_real_1 (\\
& k2_weierstr (k7_relset_1 (u1_struct_0 (k3_pcomps_1 X0)) (u1_struct_0 \\
& k3_topmetr) (k4_weierstr X0 X2) X1)) (k2_weierstr (k7_relset_1 \\
& (u1_struct_0 (k3_pcomps_1 X0)) (u1_struct_0 k3_topmetr) (k4_weierstr \\
& X0 X3) X1)))))) (k4_metric_1 X0 X2 X3))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge \\
& ((v7_metric_1 X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 \\
& X0)))))) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 \\
& X0)))) \Rightarrow ((v1_funct_1 (k5_weierstr X0 X1)) \wedge ((v1_funct_2 (k5_weierstr \\
& X0 X1) (u1_struct_0 (k3_pcomps_1 X0)) (u1_struct_0 k3_topmetr)) \wedge \\
& (m1_subset_1 (k5_weierstr X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
& (k3_pcomps_1 X0)) (u1_struct_0 k3_topmetr))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v7_metric_1 \\
& X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \Rightarrow \\
& (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 \\
& X0)))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 \\
& (k3_pcomps_1 X0)) (u1_struct_0 k3_topmetr)) \wedge (m1_subset_1 X2 \\
& (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 (k3_pcomps_1 X0)) (u1_struct_0 \\
& k3_topmetr)))))) \Rightarrow ((X2 = k5_weierstr X0 X1) \Leftrightarrow (\forall X3.(m1_subset_1 \\
& X3 (u1_struct_0 X0)) \Rightarrow (k1_funct_1 X2 X3 = k2_weierstr (k7_relset_1 \\
& (u1_struct_0 (k3_pcomps_1 X0)) (u1_struct_0 k3_topmetr) (k4_weierstr \\
& X0 X3) X1))))))
\end{aligned} \tag{3}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v7_metric_1 \\
& X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \Rightarrow \\
& (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 \\
& X0)))) \Rightarrow ((v2_compts_1 X1 (k3_pcomps_1 X0)) \Rightarrow ((X1 = k1_xboole_0) \vee \\
& (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 \\
& X3 (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 k1_numbers) \Rightarrow \\
& (\forall X5.(m1_subset_1 X5 k1_numbers) \Rightarrow (((X4 = k1_funct_1 (k5_weierstr \\
& X0 X1) X2) \wedge (X5 = k1_funct_1 (k5_weierstr X0 X1) X3)) \Rightarrow (r1_xxreal_0 \\
& (k18_complex1 (k9_real_1 X4 X5)) (k4_metric_1 X0 X2 X3))))))))))
\end{aligned}$$