

# t17\_weierstr (TMHbRp- ncW4KAucaib7rTPKeEFHcTjXkKkvN)

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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  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_pcomps\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v2\_compts\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_topmetr : \iota$  be given. Let  $k4\_weierstr : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_weierstr : \iota \Rightarrow \iota$  be given. Let  $k7\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v5\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  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. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v7\_metric\_1 \\ & X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow \\ & (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (v5\_pre\_topc ( \\ & k4\_weierstr X0 X1) (k3\_pcomps\_1 X0) k3\_topmetr)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 k3\_topmetr)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 ( \\ & k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 k3\_topmetr)))))) \Rightarrow \\ & (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow \\ & (\neg (X2 \neq k1\_xboole\_0) \wedge ((v2\_compts\_1 X2 X0) \wedge ((v5\_pre\_topc X1 X0 \\ & k3\_topmetr) \wedge (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow ( \\ & \neg (X3 \in X2) \wedge (k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 k3\_topmetr) \\ & X1 X3 = k2\_weierstr (k7\_relset\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & k3\_topmetr) X1 X2)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_metric\_1 X0)) \Rightarrow (\neg v2\_struct\_0 (k3\_pcomps\_1 X0)) \quad (3)$$

Assume the following.

$$\forall X0.(l1\_metric\_1 X0) \Rightarrow ((v1\_pre\_topc (k3\_pcomps\_1 X0)) \wedge (v2\_pre\_topc (k3\_pcomps\_1 X0))) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge \\ & ((v7\_metric\_1 X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 \\ & X0)))))) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 X0))) \Rightarrow ((v1\_funct\_1 (k4\_weierstr \\ & X0 X1)) \wedge ((v1\_funct\_2 (k4\_weierstr X0 X1) (u1\_struct\_0 (k3\_pcomps\_1 \\ & X0)) (u1\_struct\_0 k3\_topmetr)) \wedge (m1\_subset\_1 (k4\_weierstr X0 \\ & X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 (k3\_pcomps\_1 X0)) \\ & (u1\_struct\_0 k3\_topmetr)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.(l1\_metric\_1 X0) \Rightarrow (l1\_pre\_topc (k3\_pcomps\_1 X0)) \quad (6)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v7\_metric\_1 \\ & X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow \\ & (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (u1\_struct\_0 (k3\_pcomps\_1 X0)))) \Rightarrow (\neg (X2 \neq k1\_xboole\_0) \wedge \\ & ((v2\_compts\_1 X2 (k3\_pcomps\_1 X0)) \wedge (\forall X3.(m1\_subset\_1 \\ & X3 (u1\_struct\_0 (k3\_pcomps\_1 X0)) \Rightarrow (\neg (X3 \in X2) \wedge (k3\_funct\_2 (u1\_struct\_0 \\ & (k3\_pcomps\_1 X0)) (u1\_struct\_0 k3\_topmetr) (k4\_weierstr X0 X1) \\ & X3 = k2\_weierstr (k7\_relset\_1 (u1\_struct\_0 (k3\_pcomps\_1 X0)) ( \\ & u1\_struct\_0 k3\_topmetr) (k4\_weierstr X0 X1) X2)))))) \end{aligned}$$