

## t19\_metric\_6

(TMJk8uYMYkWe1bCBthJ4mddL4GkcjTZJPek)

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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  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_metric\_6 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_pcomps\_1 : \iota \Rightarrow \iota$  be given. Let  $r2\_metric\_6 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k9\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v7\_metric\_1 \\
 & X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow \\
 & (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (( \\
 & v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 k5\_numbers (u1\_struct\_0 X0)) \wedge \\
 & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 \\
 & X0)))))) \Rightarrow ((\forall X3. (m1\_subset\_1 X3 k1\_numbers (u1\_struct\_0 \\
 & X0)) \Rightarrow (((X1 \in X3) \wedge (X3 \in k2\_pcomps\_1 X0)) \Rightarrow (r2\_metric\_6 X0 X3 X2))) \Rightarrow \\
 & (r1\_metric\_6 X0 X2 X1))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v7\_metric\_1 \\
 & X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow \\
 & (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (( \\
 & v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 k5\_numbers (u1\_struct\_0 X0)) \wedge \\
 & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 \\
 & X0)))))) \Rightarrow ((\forall X3. (m1\_subset\_1 X3 k1\_numbers) \Rightarrow ((\neg r1\_xxreal\_0 \\
 & X3 k6\_numbers) \Rightarrow (r2\_metric\_6 X0 (k9\_metric\_1 X0 X1 X3) X2))) \Rightarrow (\forall X3. \\
 & (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0)) \Rightarrow (((X1 \in X3) \wedge ( \\
 & X3 \in k2\_pcomps\_1 X0)) \Rightarrow (r2\_metric\_6 X0 X3 X2))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v7\_metric\_1 \\
& X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow \\
& (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(( \\
& v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 k5\_numbers (u1\_struct\_0 X0)) \wedge \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 \\
& X0)))))) \Rightarrow ((r1\_metric\_6 X0 X2 X1) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\
& k1\_numbers) \Rightarrow ((\neg r1\_xxreal\_0 X3 k6\_numbers) \Rightarrow (r2\_metric\_6 X0 ( \\
& k9\_metric\_1 X0 X1 X3) X2))))))
\end{aligned} \tag{3}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v7\_metric\_1 \\
& X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow \\
& (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(( \\
& v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 k5\_numbers (u1\_struct\_0 X0)) \wedge \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 \\
& X0)))))) \Rightarrow ((r1\_metric\_6 X0 X2 X1) \Leftrightarrow (\forall X3.(m1\_subset\_1 X3 \\
& (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (((X1 \in X3) \wedge (X3 \in k2\_pcomps\_1 \\
& X0)) \Rightarrow (r2\_metric\_6 X0 X3 X2))))))
\end{aligned}$$