

# t34\_metric\_2 (TMN- RCtJ4FmH36GXvEmuA46xbJC6khxkQAqL)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v6\_metric\_1 : \iota \Rightarrow o$  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  $k2\_metric\_2 : \iota \Rightarrow \iota$  be given. Let  $k1\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_metric\_2 : \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_metric\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r3\_metric\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $r1\_metric\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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. Let  $k1\_numbers : \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v8\_metric\_1 \\ X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ X0)) \Rightarrow ((k1\_metric\_2 X0 X1 = k1\_metric\_2 X0 X2) \Leftrightarrow (r3\_metric\_2 X0 X1 \\ X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v8\_metric\_1 \\ X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 (u1\_struct\_0 X0)) \Rightarrow (X1 \in k1\_metric\_2 X0 X1)) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1.(m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v8\_metric\_1 \\ X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ X0)) \Rightarrow ((X2 \in k1\_metric\_2 X0 X1) \Leftrightarrow (r3\_metric\_2 X0 X2 X1)))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2\_struct\_0 X1) \wedge (l1\_metric\_1 X1)) \Rightarrow \\ & ((X0 \in k2\_metric\_2 X1) \Leftrightarrow (\exists X2. (m1\_subset\_1 X2 (u1\_struct\_0 \\ & X1)) \wedge (X0 = k1\_metric\_2 X1 X2))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge (v8\_metric\_1 \\ & X0) \wedge (l1\_metric\_1 X0)) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge ( \\ & m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow ((r3\_metric\_2 X0 X1 X2) \Leftrightarrow (r1\_metric\_2 \\ & X0 X1 X2)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v8\_metric\_1 X0) \wedge (l1\_metric\_1 \\ & X0)) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)))) \Rightarrow (k4\_metric\_1 X0 X1 X2 = k2\_metric\_1 X0 X1 X2) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_metric\_1 X0)) \Rightarrow (\neg v1\_xboole\_0 \\ & (k2\_metric\_2 X0)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v8\_metric\_1 \\ & X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow ((v1\_funct\_1 (k10\_metric\_2 \\ & X0)) \wedge ((v1\_funct\_2 (k10\_metric\_2 X0) (k2\_zfmisc\_1 (k2\_metric\_2 \\ & X0) (k2\_metric\_2 X0)) k1\_numbers) \wedge (m1\_subset\_1 (k10\_metric\_2 \\ & X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_metric\_2 X0) ( \\ & k2\_metric\_2 X0)) k1\_numbers)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_metric\_1 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 \\ & (u1\_struct\_0 X0)) \Rightarrow ((r1\_metric\_2 X0 X1 X2) \Leftrightarrow (k2\_metric\_1 X0 X1 X2 = \\ & k6\_numbers)))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v8\_metric\_1 \\
& X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow (\forall X1.((v1\_funct\_1 \\
& X1) \wedge ((v1\_funct\_2 X1 (k2\_zfmisc\_1 (k2\_metric\_2 X0) (k2\_metric\_2 \\
& X0)) k1\_numbers) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 ( \\
& k2\_zfmisc\_1 (k2\_metric\_2 X0) (k2\_metric\_2 X0)) k1\_numbers)))))) \Rightarrow \\
& ((X1 = k10\_metric\_2 X0) \Leftrightarrow (\forall X2.(m1\_subset\_1 X2 (k2\_metric\_2 \\
& X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (k2\_metric\_2 X0)) \Rightarrow (\forall X4. \\
& (m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 \\
& (u1\_struct\_0 X0)) \Rightarrow (((X4 \in X2) \wedge (X5 \in X3)) \Rightarrow (k1\_metric\_1 (k2\_metric\_2 \\
& X0) (k2\_metric\_2 X0) X1 X2 X3 = k4\_metric\_1 X0 X4 X5))))))))) \\
& \hspace{15em} (11)
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v8\_metric\_1 \\
& X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\
& X1 (k2\_metric\_2 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k2\_metric\_2 \\
& X0)) \Rightarrow ((k1\_metric\_1 (k2\_metric\_2 X0) (k2\_metric\_2 X0) (k10\_metric\_2 \\
& X0) X1 X2 = k6\_numbers) \Leftrightarrow (X1 = X2))))
\end{aligned}$$