t8_topmetr3 (TMb2PupSahapgp9WrRBa4Jec3beMUKMPPvJ)

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Let $v1\_xreal\_0 : \iota \Rightarrow o$ 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 $k5\_numbers : \iota$ be given. Let $k1\_numbers : \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k2\_topmetr : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2\_comseq\_2 : \iota \Rightarrow o$ be given. Let $v2\_tbsp\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_seq\_2 : \iota \Rightarrow \iota$ be given. Let $k1\_tbsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8\_metric\_1 : \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v1\_metric\_1 : \iota \Rightarrow o$ 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 $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_metric\_1 : \iota \Rightarrow o$ be given. Let $m1\_topmetr : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0) \Rightarrow (\forall X1.(v1\_xreal\_0\ X1) \Rightarrow (\forall X2.((v1\_funct\_1\ X2) \wedge ((v1\_funct\_2\ X2\ k5\_numbers\ (u1\_struct\_0\ (k2\_topmetr\ X0\ X1))) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (u1\_struct\_0\ (k2\_topmetr\ X0\ X1)))))) \Rightarrow (\forall X3.((v1\_funct\_1\ X3) \wedge ((v1\_funct\_2\ X3\ k5\_numbers\ (u1\_struct\_0\ k8\_metric\_1)) \wedge (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (u1\_struct\_0\ k8\_metric\_1)))))) \Rightarrow (((r1\_funct\_2\ k5\_numbers\ (u1\_struct\_0\ k8\_metric\_1)\ k5\_numbers\ (u1\_struct\_0\ (k2\_topmetr\ X0\ X1))\ X3\ X2) \wedge (r1\_xxreal\_0\ X0\ X1)) \Rightarrow (((v2\_tbsp\_1\ X3\ k8\_metric\_1) \Rightarrow (v2\_tbsp\_1\ X2\ (k2\_topmetr\ X0\ X1))) \wedge (((v2\_tbsp\_1\ X2\ (k2\_topmetr\ X0\ X1)) \Rightarrow (v2\_tbsp\_1\ X3\ k8\_metric\_1)) \wedge ((v2\_tbsp\_1\ X3\ k8\_metric\_1) \Rightarrow (k1\_tbsp\_1\ k8\_metric\_1\ X3 = k1\_tbsp\_1\ (k2\_topmetr\ X0\ X1)\ X2)))))))) \tag{1}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow(\forall X1.(v1\_xreal\_0\ X1)\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ (u1\_struct\_0\ (k2\_topmetr\ X0\ X1)))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (u1\_struct\_0\ (k2\_topmetr\ X0\ X1)))))))\Rightarrow((r1\_xxreal\_0\ X0\ X1)\Rightarrow((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ (u1\_struct\_0\ k8\_metric\_1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (u1\_struct\_0\ k8\_metric\_1))))))))) \tag{2}$$

Assume the following.

$$\forall X0.((v1\_funct\_1\ X0)\wedge((v1\_funct\_2\ X0\ k5\_numbers\ k1\_numbers)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers)))))\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ (u1\_struct\_0\ k8\_metric\_1))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (u1\_struct\_0\ k8\_metric\_1)))))))\Rightarrow((r1\_funct\_2\ k5\_numbers\ k1\_numbers\ k5\_numbers\ (u1\_struct\_0\ k8\_metric\_1)\ X0\ X1)\Rightarrow(((v2\_comseq\_2\ X0)\Rightarrow(v2\_tbsp\_1\ X1\ k8\_metric\_1))\wedge(((v2\_tbsp\_1\ X1\ k8\_metric\_1)\Rightarrow(v2\_comseq\_2\ X0))\wedge((v2\_comseq\_2\ X0)\Rightarrow(k2\_seq\_2\ X0 = k1\_tbsp\_1\ k8\_metric\_1\ X1)))))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.((\neg v1\_xboole\_0\ X1)\wedge((\neg v1\_xboole\_0\ X3)\wedge(((v1\_funct\_1\ X4)\wedge((v1\_funct\_2\ X4\ X0\ X1)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))))\wedge((v1\_funct\_1\ X5)\wedge((v1\_funct\_2\ X5\ X2\ X3)\wedge(m1\_subset\_1\ X5\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X2\ X3))))))))\Rightarrow((r1\_funct\_2\ X0\ X1\ X2\ X3\ X4\ X5)\Leftrightarrow(X4 = X5)) \tag{4}$$

Assume the following.

$$(v1\_metric\_1\ k8\_metric\_1)\wedge((v6\_metric\_1\ k8\_metric\_1)\wedge((v7\_metric\_1\ k8\_metric\_1)\wedge((v8\_metric\_1\ k8\_metric\_1)\wedge(v9\_metric\_1\ k8\_metric\_1)))) \tag{5}$$

Assume the following.

$$(\neg v2\_struct\_0\ k8\_metric\_1)\wedge(v1\_metric\_1\ k8\_metric\_1) \tag{6}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_struct\_0\ X0))\Rightarrow(\neg v1\_xboole\_0\ (u1\_struct\_0\ X0)) \tag{7}$$

Assume the following.

$$\neg v1\_xboole\_0\ k1\_numbers \tag{8}$$

Assume the following.

$$\forall X0.((v6\_metric\_1\ X0)\wedge((v7\_metric\_1\ X0)\wedge((v8\_metric\_1\ X0)\wedge((v9\_metric\_1\ X0)\wedge(l1\_metric\_1\ X0)))))\Rightarrow(\forall X1.(m1\_topmetr\ X1\ X0)\Rightarrow((v6\_metric\_1\ X1)\wedge((v7\_metric\_1\ X1)\wedge((v8\_metric\_1\ X1)\wedge((v9\_metric\_1\ X1)\wedge(l1\_metric\_1\ X1))))))) \tag{9}$$

Assume the following.

$$\forall X0.(l1\_metric\_1\ X0)\Rightarrow(l1\_struct\_0\ X0) \tag{10}$$

Assume the following.

$$(v1\_metric\_1\ k8\_metric\_1)\wedge(l1\_metric\_1\ k8\_metric\_1) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0\ X0)\wedge(v1\_xreal\_0\ X1))\Rightarrow((\neg v2\_struct\_0\ (k2\_topmetr\ X0\ X1))\wedge((v1\_metric\_1\ (k2\_topmetr\ X0\ X1))\wedge(m1\_topmetr\ (k2\_topmetr\ X0\ X1)\ k8\_metric\_1))) \tag{12}$$

Theorem 1

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow(\forall X1.(v1\_xreal\_0\ X1)\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ k1\_numbers)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers)))))\Rightarrow(\forall X3.((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ k5\_numbers\ (u1\_struct\_0\ (k2\_topmetr\ X0\ X1)))\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (u1\_struct\_0\ (k2\_topmetr\ X0\ X1))))))\Rightarrow(((r1\_funct\_2\ k5\_numbers\ (u1\_struct\_0\ (k2\_topmetr\ X0\ X1))\ k5\_numbers\ k1\_numbers\ X3\ X2)\wedge((r1\_xxreal\_0\ X0\ X1)\wedge(v2\_comseq\_2\ X2)))\Rightarrow((v2\_tbsp\_1\ X3\ (k2\_topmetr\ X0\ X1))\wedge(k2\_seq\_2\ X2 = k1\_tbsp\_1\ (k2\_topmetr\ X0\ X1)\ X3))))))$$