t17_topalg_5 (TMYjxmxv6pC2bsmgF2Ha677KvWWxHUQDKAk)

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Let $v1\_xreal\_0 : \iota \Rightarrow o$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_connsp\_2 : \iota \Rightarrow o$ be given. Let $k4\_topmetr : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $v1\_cantor\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_tops\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_topmetr : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_numbers : \iota$ be given. Let $k9\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np\_\_1 : \iota$ be given. Let $k6\_numbers : \iota$ be given. Let $k3\_card\_3 : \iota \Rightarrow \iota$ be given. Let $v2\_connsp\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v2\_pre\_topc : \iota \Rightarrow o$ be given. Let $l1\_pre\_topc : \iota \Rightarrow o$ be given. Let $m1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_pre\_topc : \iota \Rightarrow o$ be given. Let $k3\_topmetr : \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X2))) \Rightarrow (m1\_subset\_1\ X0\ X2) \tag{1}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0) \Rightarrow (\forall X1.(v1\_xreal\_0\ X1) \Rightarrow (\neg (r1\_xxreal\_0\ X0\ X1) \wedge (\forall X2.((v1\_cantor\_1\ X2\ (k4\_topmetr\ X0\ X1)) \wedge ((v1\_tops\_2\ X2\ (k4\_topmetr\ X0\ X1)) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ (k4\_topmetr\ X0\ X1)))))))) \Rightarrow (\neg (\exists X3.((v1\_relat\_1\ X3) \wedge ((v4\_relat\_1\ X3\ (u1\_struct\_0\ (k4\_topmetr\ X0\ X1))) \wedge ((v1\_funct\_1\ X3) \wedge (v1\_partfun1\ X3\ (u1\_struct\_0\ (k4\_topmetr\ X0\ X1)))))) \wedge (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ (k2\_topmetr\ X0\ X1))) \Rightarrow ((k1\_funct\_1\ X3\ X4 = ReplSep\ (toset\ (\lambda X5 : \iota.m1\_subset\_1\ X5\ k5\_numbers))\ (\lambda X5 : \iota.X5 \neq k6\_numbers)\ (\lambda X5 : \iota.k9\_metric\_1\ (k2\_topmetr\ X0\ X1)\ X4\ (k10\_real\_1\ np\_\_1\ X5))) \wedge (X2 = k3\_card\_3\ X3)))) \wedge (\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (u1\_struct\_0\ (k4\_topmetr\ X0\ X1)))) \Rightarrow ((X3 \in X2) \Rightarrow (v2\_connsp\_1\ X3\ (k4\_topmetr\ X0\ X1)))))))) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0)))\Rightarrow((\exists X1.((v1\_cantor\_1\ X1\ X0)\wedge((v1\_tops\_2\ X1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))))\wedge(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow((X2\in X1)\Rightarrow(v2\_connsp\_1\ X2\ X0))))\Rightarrow(v1\_connsp\_2\ X0)) \tag{3}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(\forall X1.(m1\_pre\_topc\ X1\ X0)\Rightarrow(l1\_pre\_topc\ X1)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0\ X0)\wedge(v1\_xreal\_0\ X1))\Rightarrow((\neg v2\_struct\_0\ (k4\_topmetr\ X0\ X1))\wedge((v1\_pre\_topc\ (k4\_topmetr\ X0\ X1))\wedge(m1\_pre\_topc\ (k4\_topmetr\ X0\ X1)\ k3\_topmetr))) \tag{5}$$

Assume the following.

$$(v2\_pre\_topc\ k3\_topmetr)\wedge(l1\_pre\_topc\ k3\_topmetr) \tag{6}$$

Assume the following.

$$\forall X0.((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0))\Rightarrow(\forall X1.(m1\_pre\_topc\ X1\ X0)\Rightarrow(v2\_pre\_topc\ X1)) \tag{7}$$

Theorem 1

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow(\forall X1.(v1\_xreal\_0\ X1)\Rightarrow((r1\_xxreal\_0\ X0\ X1)\Rightarrow(v1\_connsp\_2\ (k4\_topmetr\ X0\ X1))))$$