t42_cqc_the3 (TMHg-mEz42DaMbkKnviMMxWTyRy6HBbmZi87)

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Let $m1\_qc\_lang1 : \iota \Rightarrow o$ be given. Let $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9\_qc\_lang1 : \iota \Rightarrow \iota$ be given. Let $k3\_cqc\_lang : \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $r6\_cqc\_the3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3\_cqc\_the1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v6\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r5\_cqc\_the3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r4\_cqc\_the3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2\_cqc\_the3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_numbers : \iota$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np\_\_1 : \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_finseq\_1 : \iota \Rightarrow o$ be given. Let $k3\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_qc\_lang1 : \iota \Rightarrow \iota$ be given. Let $k3\_qc\_lang1 : \iota \Rightarrow \iota$ be given. Let $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k3\_cqc\_lang\ X0))) \Rightarrow (\forall X2.(m2\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X3.(m2\_subset\_1\ X3\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (((v6\_qc\_lang1\ X2\ X0) \wedge (r3\_cqc\_the1\ X0\ (k4\_subset\_1\ (k3\_cqc\_lang\ X0)\ X1\ (k6\_domain\_1\ (k3\_cqc\_lang\ X0)\ X2))\ X3)) \Rightarrow (r3\_cqc\_the1\ X0\ X1\ (k8\_cqc\_lang\ X0\ X2\ X3)))))) \tag{1}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m2\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X2.(m2\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k3\_cqc\_lang\ X0))) \Rightarrow ((r3\_cqc\_the1\ X0\ X3\ (k8\_cqc\_lang\ X0\ X1\ X2)) \Rightarrow (r3\_cqc\_the1\ X0\ (k4\_subset\_1\ (k3\_cqc\_lang\ X0)\ X3\ (k6\_domain\_1\ (k3\_cqc\_lang\ X0)\ X1))\ X2))))) \tag{2}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m2\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0))\Rightarrow(\forall X2.(m2\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0))\Rightarrow((r6\_cqc\_the3\ X0\ X1\ X2)\Rightarrow(r5\_cqc\_the3\ X0\ X1\ X2)))) \tag{3}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m2\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0))\Rightarrow(\forall X2.(m2\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0))\Rightarrow((r5\_cqc\_the3\ X0\ X1\ X2)\Leftrightarrow(r4\_cqc\_the3\ X0\ (k6\_domain\_1\ (k3\_cqc\_lang\ X0)\ X1)\ (k6\_domain\_1\ (k3\_cqc\_lang\ X0)\ X2))))) \tag{4}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k3\_cqc\_lang\ X0)))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k3\_cqc\_lang\ X0)))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k3\_cqc\_lang\ X0)))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k3\_cqc\_lang\ X0)))\Rightarrow(((r4\_cqc\_the3\ X0\ X1\ X2)\wedge(r2\_cqc\_the3\ X0\ (k4\_subset\_1\ (k3\_cqc\_lang\ X0)\ X1\ X3)\ X4))\Rightarrow(r2\_cqc\_the3\ X0\ (k4\_subset\_1\ (k3\_cqc\_lang\ X0)\ X2\ X3)\ X4)))))) \tag{5}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m2\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k3\_cqc\_lang\ X0)))\Rightarrow((r2\_cqc\_the3\ X0\ X2\ (k6\_domain\_1\ (k3\_cqc\_lang\ X0)\ X1))\Leftrightarrow(r3\_cqc\_the1\ X0\ X2\ X1)))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_qc\_lang1\ X0)\wedge((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k3\_cqc\_lang\ X0)))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k3\_cqc\_lang\ X0)))))\Rightarrow((r4\_cqc\_the3\ X0\ X1\ X2)\Rightarrow(r4\_cqc\_the3\ X0\ X2\ X1)) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))))\Rightarrow(\forall X2.(m2\_subset\_1\ X2\ X0\ X1)\Leftrightarrow(m1\_subset\_1\ X2\ X1)) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0)))\Rightarrow(k4\_subset\_1\ X0\ X1\ X2 = k2\_xboole\_0\ X1\ X2) \tag{9}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\neg v1\_xboole\_0\ (k3\_cqc\_lang\ X0)) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge(m1\_subset\_1\ X1\ X0))\Rightarrow (m1\_subset\_1\ (k6\_domain\_1\ X0\ X1)\ (k1\_zfmisc\_1\ X0)) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0)))\Rightarrow(m1\_subset\_1\ (k4\_subset\_1\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ X0)) \tag{12}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(m1\_subset\_1\ (k3\_cqc\_lang\ X0)\ (k1\_zfmisc\_1\ (k9\_qc\_lang1\ X0))) \tag{13}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m2\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0))\Rightarrow(\forall X2.(m2\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0))\Rightarrow((r6\_cqc\_the3\ X0\ X1\ X2)\Leftrightarrow((v6\_qc\_lang1\ X1\ X0)\wedge(\exists X3.(m1\_subset\_1\ X3\ k5\_numbers)\wedge((r1\_xxreal\_0\ np\_\_1\ X3)\wedge(\exists X4.((v1\_relat\_1\ X4)\wedge((v1\_funct\_1\ X4)\wedge(v1\_finseq\_1\ X4)))\wedge((k3\_finseq\_1\ X4 = X3)\wedge((k1\_funct\_1\ X4\ np\_\_1 = X2)\wedge((k1\_funct\_1\ X4\ X3 = X1)\wedge(\forall X5.(m1\_subset\_1\ X5\ k5\_numbers)\Rightarrow(\neg(r1\_xxreal\_0\ np\_\_1\ X5)\wedge((\neg r1\_xxreal\_0\ X3\ X5)\wedge(\forall X6.(m2\_subset\_1\ X6\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0))\Rightarrow(\forall X7.(m2\_subset\_1\ X7\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0))\Rightarrow(\neg(X7 = k1\_funct\_1\ X4\ X5)\wedge(k1\_funct\_1\ X4\ (k2\_nat\_1\ X5\ np\_\_1) = k11\_cqc\_lang\ X0\ X6\ X7)))))))))))))))) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0\ X0\ X1 = k2\_xboole\_0\ X1\ X0 \tag{15}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\Rightarrow(v1\_xboole\_0\ X1)) \tag{16}$$

Theorem 1

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m2\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0))\Rightarrow(\forall X2.(m2\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0))\Rightarrow(\forall X3.(m2\_subset\_1\ X3\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k3\_cqc\_lang\ X0)))\Rightarrow((r6\_cqc\_the3\ X0\ X1\ X2)\Rightarrow((r3\_cqc\_the1\ X0\ (k4\_subset\_1\ (k3\_cqc\_lang\ X0)\ X4\ (k6\_domain\_1\ (k3\_cqc\_lang\ X0)\ X2))\ X3)\Leftrightarrow(r3\_cqc\_the1\ X0\ X4\ (k8\_cqc\_lang\ X0\ X1\ X3))))))))$$