t6_integr15 (TMHRchaH5n5DZyyCdz7hGWTAT8Cfb42vrUJ)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v2\_measure5 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_numbers : \iota$ 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 $k5\_numbers : \iota$ be given. Let $k1\_integra1 : \iota \Rightarrow \iota$ be given. Let $m2\_integr15 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_seq\_2 : \iota \Rightarrow o$ be given. Let $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_integr15 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_integra2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_integra1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_integr15 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_integr15 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_integra1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_ordinal1 : \iota$ be given. Let $v3\_ordinal1 : \iota \Rightarrow o$ be given. Let $k2\_integra2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_integr15 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0) \wedge ((v2\_measure5\ X0) \wedge (m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ k1\_numbers)))) \Rightarrow (\forall X1.((v1\_funct\_1\ X1) \wedge ((v1\_funct\_2\ X1\ X0\ k1\_numbers) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))) \Rightarrow (\forall X2.(m1\_integra1\ X2\ X0) \Rightarrow (\forall X3.(m1\_integr15\ X3\ X0\ X1\ X2) \Rightarrow ((v1\_seq\_2\ (k2\_partfun1\ X0\ k1\_numbers\ X1\ X0)) \Rightarrow (r1\_xxreal\_0\ (k1\_integr15\ X0\ X1\ X2\ X3)\ (k6\_integra1\ X0\ X1\ X2))))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0) \wedge ((\neg v1\_xboole\_0\ X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)))) \Rightarrow (\forall X2.(m2\_subset\_1\ X2\ X0\ X1) \Leftrightarrow (m1\_subset\_1\ X2\ X1)) \tag{2}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{3}$$

Assume the following.

$$(\neg v1\_xboole\_0\ k4\_ordinal1) \wedge (v3\_ordinal1\ k4\_ordinal1) \tag{4}$$

Assume the following.

$$\neg v1\_xboole\_0\ k1\_numbers \tag{5}$$

Assume the following.

$$m1\_subset\_1\ k5\_numbers\ (k1\_zfmisc\_1\ k1\_numbers) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v1\_xboole\_0\ X0)\wedge((v2\_measure5\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ k1\_numbers))))\wedge(((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ (k1\_integra1\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k1\_integra1\ X0))))))))\Rightarrow((v1\_funct\_1\ (k3\_integra2\ X0\ X1\ X2))\wedge((v1\_funct\_2\ (k3\_integra2\ X0\ X1\ X2)\ k5\_numbers\ k1\_numbers)\wedge(m1\_subset\_1\ (k3\_integra2\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers)))))) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1\_xboole\_0\ X0)\wedge((v2\_measure5\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ k1\_numbers))))\wedge(((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers)))))\wedge(((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ (k1\_integra1\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k1\_integra1\ X0))))))\wedge(m2\_integr15\ X3\ X0\ X1\ X2))))\Rightarrow((v1\_funct\_1\ (k3\_integr15\ X0\ X1\ X2\ X3))\wedge((v1\_funct\_2\ (k3\_integr15\ X0\ X1\ X2\ X3)\ k5\_numbers\ k1\_numbers)\wedge(m1\_subset\_1\ (k3\_integr15\ X0\ X1\ X2\ X3)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers))))) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v1\_xboole\_0\ X0)\wedge((v2\_measure5\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ k1\_numbers))))\wedge(((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ k5\_numbers\ (k1\_integra1\ X0))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k1\_integra1\ X0))))))\wedge(m1\_subset\_1\ X2\ k5\_numbers)))\Rightarrow(m1\_integra1\ (k2\_integra2\ X0\ X1\ X2)\ X0) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v1\_xboole\_0\ X0)\wedge((v2\_measure5\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ k1\_numbers))))\wedge(((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers)))))\wedge(((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ (k1\_integra1\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k1\_integra1\ X0))))))\wedge((m2\_integr15\ X3\ X0\ X1\ X2)\wedge(m1\_subset\_1\ X4\ k5\_numbers)))))\Rightarrow(m1\_integr15\ (k2\_integr15\ X0\ X1\ X2\ X3\ X4)\ X0\ X1\ (k2\_integra2\ X0\ X2\ X4)) \tag{10}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge((v2\_measure5\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ k1\_numbers))))\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers)))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ (k1\_integra1\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k1\_integra1\ X0))))))\Rightarrow(\forall X3.(m2\_integr15\ X3\ X0\ X1\ X2)\Rightarrow(\forall X4.((v1\_funct\_1\ X4)\wedge((v1\_funct\_2\ X4\ k5\_numbers\ k1\_numbers)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers)))))\Rightarrow((X4 = k3\_integr15\ X0\ X1\ X2\ X3)\Leftrightarrow(\forall X5.(m2\_subset\_1\ X5\ k1\_numbers\ k5\_numbers)\Rightarrow(k1\_seq\_1\ X4\ X5 = k1\_integr15\ X0\ X1\ (k2\_integra2\ X0\ X2\ X5)\ (k2\_integr15\ X0\ X1\ X2\ X3\ X5)))))))) \tag{11}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge((v2\_measure5\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ k1\_numbers))))\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ (k1\_integra1\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k1\_integra1\ X0))))))\Rightarrow(\forall X3.((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ k5\_numbers\ k1\_numbers)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers)))))\Rightarrow((X3 = k3\_integra2\ X0\ X1\ X2)\Leftrightarrow(\forall X4.(m2\_subset\_1\ X4\ k1\_numbers\ k5\_numbers)\Rightarrow(k1\_seq\_1\ X3\ X4 = k6\_integra1\ X0\ X1\ (k2\_integra2\ X0\ X2\ X4))))))) \tag{12}$$

Theorem 1

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge((v2\_measure5\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ k1\_numbers))))\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers)))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ (k1\_integra1\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k1\_integra1\ X0))))))\Rightarrow(\forall X3.(m2\_integr15\ X3\ X0\ X1\ X2)\Rightarrow(\forall X4.(m2\_subset\_1\ X4\ k1\_numbers\ k5\_numbers)\Rightarrow((v1\_seq\_2\ (k2\_partfun1\ X0\ k1\_numbers\ X1\ X0))\Rightarrow(r1\_xxreal\_0\ (k1\_seq\_1\ (k3\_integr15\ X0\ X1\ X2\ X3)\ X4)\ (k1\_seq\_1\ (k3\_integra2\ X0\ X1\ X2)\ X4)))))))$$