t15_fdiff_3 (TMUVvQBxCi36UVKoJiRWncS6Kypw4A5dNEi)

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Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_numbers : \iota$ be given. Let $r3\_fdiff\_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_fdiff\_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6\_numbers : \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_rcomp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_numbers : \iota$ be given. Let $v1\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3\_funct\_1 : \iota \Rightarrow o$ be given. Let $k2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_tarski : \iota \Rightarrow \iota$ be given. Let $k3\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2\_comseq\_2 : \iota \Rightarrow o$ be given. Let $k20\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k37\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k47\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_seq\_2 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers) \Rightarrow (\forall X1.((v1\_funct\_1\ X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers)))) \Rightarrow ((r3\_fdiff\_3\ X1\ X0) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ k1\_numbers) \Rightarrow ((X2 = k2\_fdiff\_3\ X0\ X1) \Leftrightarrow (\forall X3.((v2\_relat\_1\ X3) \wedge ((v1\_funct\_1\ X3) \wedge ((v1\_funct\_2\ X3\ k5\_numbers\ k1\_numbers) \wedge ((v1\_fdiff\_1\ X3\ k6\_numbers) \wedge (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers))))))) \Rightarrow (\forall X4.((v1\_funct\_1\ X4) \wedge ((v3\_funct\_1\ X4) \wedge ((v1\_funct\_2\ X4\ k5\_numbers\ k1\_numbers) \wedge (m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers)))))) \Rightarrow (((k2\_relset\_1\ k1\_numbers\ X4 = k1\_tarski\ X0) \wedge ((r1\_tarski\ (k2\_relset\_1\ k1\_numbers\ (k3\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ X3\ X4))\ (k1\_relset\_1\ k1\_numbers\ X1)) \wedge (\forall X5.(m2\_subset\_1\ X5\ k1\_numbers\ k5\_numbers) \Rightarrow (\neg r1\_xxreal\_0\ (k1\_seq\_1\ X3\ X5)\ k6\_numbers)))) \Rightarrow (X2 = k2\_seq\_2\ (k20\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k37\_valued\_1\ k5\_numbers\ k1\_numbers\ X3)\ (k47\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k8\_funct\_2\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k3\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ X3\ X4)\ X1)\ (k8\_funct\_2\ k5\_numbers\ k1\_numbers\ k1\_numbers\ X4\ X1))))))))))) \tag{1}$$

Assume the following.

$$\forall X0.((v1\_funct\_1\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ k1\_numbers)\Rightarrow((r3\_fdiff\_3\ X0\ X1)\Leftrightarrow((\exists X2.(m1\_subset\_1\ X2\ k1\_numbers)\wedge((\neg r1\_xxreal\_0\ X2\ k6\_numbers)\wedge(r1\_tarski\ (k1\_rcomp\_1\ X1\ (k7\_real\_1\ X1\ X2))\ (k1\_relset\_1\ k1\_numbers\ X0))))\wedge(\forall X2.((v2\_relat\_1\ X2)\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ k1\_numbers)\wedge((v1\_fdiff\_1\ X2\ k6\_numbers)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers)))))))\Rightarrow(\forall X3.((v1\_funct\_1\ X3)\wedge((v3\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ k5\_numbers\ k1\_numbers)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers))))))\Rightarrow((k2\_relset\_1\ k1\_numbers\ X3 = k1\_tarski\ X1)\wedge((r1\_tarski\ (k2\_relset\_1\ k1\_numbers\ (k3\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ X2\ X3))\ (k1\_relset\_1\ k1\_numbers\ X0))\wedge(\forall X4.(m2\_subset\_1\ X4\ k1\_numbers\ k5\_numbers)\Rightarrow(\neg r1\_xxreal\_0\ (k1\_seq\_1\ X2\ X4)\ k6\_numbers))))\Rightarrow(v2\_comseq\_2\ (k20\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k37\_valued\_1\ k5\_numbers\ k1\_numbers\ X2)\ (k47\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k8\_funct\_2\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k3\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ X2\ X3)\ X0)\ (k8\_funct\_2\ k5\_numbers\ k1\_numbers\ k1\_numbers\ X3\ X0))))))))))\tag{2}$$

Theorem 1

$$\forall X0.((v1\_funct\_1\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ k1\_numbers)\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ k1\_numbers)\Rightarrow((((r3\_fdiff\_3\ X0\ X1)\wedge(k2\_fdiff\_3\ X1\ X0 = X2))\Rightarrow((\exists X3.(m1\_subset\_1\ X3\ k1\_numbers)\wedge((\neg r1\_xxreal\_0\ X3\ k6\_numbers)\wedge(r1\_tarski\ (k1\_rcomp\_1\ X1\ (k7\_real\_1\ X1\ X3))\ (k1\_relset\_1\ k1\_numbers\ X0))))\wedge(\forall X3.((v2\_relat\_1\ X3)\wedge((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ k5\_numbers\ k1\_numbers)\wedge((v1\_fdiff\_1\ X3\ k6\_numbers)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers)))))))\Rightarrow(\forall X4.((v1\_funct\_1\ X4)\wedge((v3\_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((((k2\_relset\_1\ k1\_numbers\ X4 = k1\_tarski\ X1)\wedge((r1\_tarski\ (k2\_relset\_1\ k1\_numbers\ (k3\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ X3\ X4))\ (k1\_relset\_1\ k1\_numbers\ X0))\wedge(\forall X5.(m2\_subset\_1\ X5\ k1\_numbers\ k5\_numbers)\Rightarrow(\neg r1\_xxreal\_0\ (k1\_seq\_1\ X3\ X5)\ k6\_numbers))))\Rightarrow((v2\_comseq\_2\ (k20\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k37\_valued\_1\ k5\_numbers\ k1\_numbers\ X3)\ (k47\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k8\_funct\_2\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k3\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ X3\ X4)\ X0)\ (k8\_funct\_2\ k5\_numbers\ k1\_numbers\ k1\_numbers\ X4\ X0))))\wedge(k2\_seq\_2\ (k20\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k37\_valued\_1\ k5\_numbers\ k1\_numbers\ X3)\ (k47\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k8\_funct\_2\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k3\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ X3\ X4)\ X0)\ (k8\_funct\_2\ k5\_numbers\ k1\_numbers\ k1\_numbers\ X4\ X0)))) = X2)))))))\wedge((\forall X3.((v2\_relat\_1\ X3)\wedge((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ k5\_numbers\ k1\_numbers)\wedge((v1\_fdiff\_1\ X3\ k6\_numbers)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k1\_numbers)))))))\Rightarrow(\forall X4.((v1\_funct\_1\ X4)\wedge((v3\_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(((k2\_relset\_1\ k1\_numbers\ X4 = k1\_tarski\ X1)\wedge((r1\_tarski\ (k2\_relset\_1\ k1\_numbers\ (k3\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ X3\ X4))\ (k1\_relset\_1\ k1\_numbers\ X0))\wedge(\forall X5.(m2\_subset\_1\ X5\ k1\_numbers\ k5\_numbers)\Rightarrow(\neg r1\_xxreal\_0\ (k1\_seq\_1\ X3\ X5)\ k6\_numbers))))\Rightarrow((v2\_comseq\_2\ (k20\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k37\_valued\_1\ k5\_numbers\ k1\_numbers\ X3)\ (k47\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k8\_funct\_2\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k3\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ X3\ X4)\ X0)\ (k8\_funct\_2\ k5\_numbers\ k1\_numbers\ k1\_numbers\ X4\ X0))))\wedge(k2\_seq\_2\ (k20\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k37\_valued\_1\ k5\_numbers\ k1\_numbers\ X3)\ (k47\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k8\_funct\_2\ k5\_numbers\ k1\_numbers\ k1\_numbers\ (k3\_valued\_1\ k5\_numbers\ k1\_numbers\ k1\_numbers\ X3\ X4)\ X0)\ (k8\_funct\_2\ k5\_numbers\ k1\_numbers\ k1\_numbers\ X4\ X0))) = X2)))))\Rightarrow((\forall X3.(m1\_subset\_1\ X3\ k1\_numbers)\Rightarrow(\neg(\neg r1\_xxreal\_0\ X3\ k6\_numbers)\wedge(r1\_tarski\ (k1\_rcomp\_1\ X1\ (k7\_real\_1\ X1\ X3))\ (k1\_relset\_1\ k1\_numbers\ X0))))\vee((r3\_fdiff\_3\ X0\ X1)\wedge(k2\_fdiff\_3\ X1\ X0 = X2)))))))$$