

# t40\_fvaluat1 (TMcDoN- pRmT3crtwaEoAKYH5kGtW8w9S4f8S)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v6\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v1\_realset2 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_fvaluat1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_fvaluat1 : \iota \Rightarrow o$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_numbers : \iota$  be given. Let  $k5\_fvaluat1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_fvaluat1 : \iota \Rightarrow \iota$  be given. Let  $k2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v3\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k4\_xxreal\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $v2\_fvaluat1 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_membered : \iota \Rightarrow o$  be given. Let  $v1\_fvaluat1 : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ( \\ & (v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v1\_realset2 X0) \wedge (l6\_algstr\_0 \\ & X0)))))))))) \Rightarrow (\forall X1. (m1\_fvaluat1 X1 X0) \Rightarrow ((v3\_fvaluat1 \\ & X0) \Rightarrow (k1\_fvaluat1 (k2\_relset\_1 k7\_numbers X1) \in k1\_numbers))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1\_xxreal\_0 X0) \wedge (\neg v2\_xxreal\_0 X0)) \wedge \\ & ((v1\_xxreal\_0 X1) \wedge (\neg v3\_xxreal\_0 X1))) \Rightarrow ((v1\_xxreal\_0 (k4\_xxreal\_3 \\ & X0 X1)) \wedge (\neg v2\_xxreal\_0 (k4\_xxreal\_3 X0 X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_xxreal\_0 X0)\wedge(v2\_xxreal\_0 X0))\wedge((v1\_xxreal\_0 X1)\wedge(v2\_xxreal\_0 X1)))\Rightarrow((v1\_xxreal\_0 (k4\_xxreal\_3 X0 X1))\wedge(v2\_xxreal\_0 (k4\_xxreal\_3 X0 X1))) \quad (4)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0)\Rightarrow(\forall X1.(m1\_fvaluat1 X1 X0)\Rightarrow((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 (u1\_struct\_0 X0) k7\_numbers)\wedge((v2\_fvaluat1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) k7\_numbers)))))))) \quad (5)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0)\Rightarrow((l2\_algstr\_0 X0)\wedge(l5\_algstr\_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0)\Rightarrow(l1\_struct\_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0)\Rightarrow((l2\_struct\_0 X0)\wedge(l1\_algstr\_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((\neg v6\_struct\_0 X0)\wedge((v13\_algstr\_0 X0)\wedge((v3\_group\_1 X0)\wedge((v5\_vectsp\_1 X0)\wedge((v2\_rlvect\_1 X0)\wedge((v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 X0)\wedge((v1\_realset2 X0)\wedge(l6\_algstr\_0 X0))))))))))\wedge(m1\_fvaluat1 X1 X0))\Rightarrow(m1\_fvaluat1 (k5\_fvaluat1 X0 X1) X0) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge(((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\wedge(m1\_subset\_1 X3 X0))\Rightarrow(m1\_subset\_1 (k3\_funct\_2 X0 X1 X2 X3) X1) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge(v5\_relat\_1 X1 X0))\Rightarrow(m1\_subset\_1 (k2\_relset\_1 X0 X1) (k1\_zfmisc\_1 X0)) \quad (11)$$

Assume the following.

$$\forall X0.(v2\_membered X0)\Rightarrow((v2\_xxreal\_0 (k1\_fvaluat1 X0))\wedge(v1\_fvaluat1 (k1\_fvaluat1 X0))) \quad (12)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Leftrightarrow (X0 \in k1\_numbers) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ( \\ & (v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v1\_realset2 X0) \wedge (l6\_algstr\_0 \\ & X0)))))))))) \Rightarrow (\forall X1.(m1\_fvaluat1 X1 X0) \Rightarrow ((v3\_fvaluat1 \\ & X0) \Rightarrow (\forall X2.(m1\_fvaluat1 X2 X0) \Rightarrow ((X2 = k5\_fvaluat1 X0 X1) \Leftrightarrow \\ & (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (k3\_funct\_2 (u1\_struct\_0 \\ & X0) k7\_numbers X1 X3 = k4\_xxreal\_3 (k3\_funct\_2 (u1\_struct\_0 X0) \\ & k7\_numbers X2 X3) (k1\_fvaluat1 (k2\_relset\_1 k7\_numbers X1))))))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 k7\_numbers)) \Rightarrow (v2\_membered X0) \quad (15)$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0 X0) \wedge (v3\_xxreal\_0 X0)) \Rightarrow ((\neg v1\_xboole\_0 X0) \wedge ((v1\_xxreal\_0 X0) \wedge (\neg v2\_xxreal\_0 X0))) \quad (16)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow ((v4\_relat\_1 X2 X0) \wedge (v5\_relat\_1 X2 X1)) \quad (18)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k7\_numbers) \Rightarrow (v1\_xxreal\_0 X0) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \quad (20)$$

### Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ( \\ & (v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v1\_realset2 X0) \wedge (l6\_algstr\_0 \\ & X0)))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow \\ & (\forall X2.(m1\_fvaluat1 X2 X0) \Rightarrow ((v3\_fvaluat1 X0) \Rightarrow ((v2\_xxreal\_0 \\ & (k3\_funct\_2 (u1\_struct\_0 X0) k7\_numbers X2 X1) \Leftrightarrow (v2\_xxreal\_0 \\ & (k3\_funct\_2 (u1\_struct\_0 X0) k7\_numbers (k5\_fvaluat1 X0 X2) X1)))))) \end{aligned}$$