

# t56\_nat\_3 (TMUNMx- hXNU8YzmagLyfmHiLMB3Ffzw3bpkw)

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Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_int.2 : \iota \Rightarrow o$  be given. Let  $v1\_xboole.0 : \iota \Rightarrow o$  be given. Let  $k11\_nat.3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k1\_seq.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k13\_nat.3 : \iota \Rightarrow \iota$  be given. Let  $k1\_newton : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat.1 : \iota \Rightarrow o$  be given. Let  $v1\_funct.1 : \iota \Rightarrow o$  be given. Let  $v3\_valued.0 : \iota \Rightarrow o$  be given. Let  $k1\_funct.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_relat.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_valued.0 : \iota \Rightarrow o$  be given. Let  $v2\_pre\_poly : \iota \Rightarrow o$  be given. Let  $k1\_polynom2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k13\_pre\_poly : \iota \Rightarrow \iota$  be given. Let  $k10\_newton : \iota$  be given. Let  $k12\_nat.3 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. ((v1\_relat.1 X0) \wedge ((v1\_funct.1 X0) \wedge (v3\_valued.0 X0))) \Rightarrow (k1\_seq.1 X0 X1 = k1\_funct.1 X0 X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat.1 X1) \wedge ((v4\_relat.1 X1 X0) \wedge ((v1\_funct.1 X1) \wedge ((v1\_partfun1 X1 X0) \wedge ((v4\_valued.0 X1) \wedge (v2\_pre\_poly X1)))))) \Rightarrow (k1\_polynom2 X0 X1 = k13\_pre\_poly X1) \quad (2)$$

Assume the following.

$$\forall X0. ((\neg v1\_xboole.0 X0) \wedge (v7\_ordinal1 X0)) \Rightarrow ((v1\_relat.1 (k13\_nat.3 X0)) \wedge ((v4\_relat.1 (k13\_nat.3 X0) k10\_newton) \wedge ((v1\_funct.1 (k13\_nat.3 X0)) \wedge ((v1\_partfun1 (k13\_nat.3 X0) k10\_newton) \wedge ((v4\_valued.0 (k13\_nat.3 X0)) \wedge (v2\_pre\_poly (k13\_nat.3 X0)))))))) \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v1\_xboole.0 X0) \wedge (v7\_ordinal1 X0)) \Rightarrow ((v1\_relat.1 (k12\_nat.3 X0)) \wedge ((v4\_relat.1 (k12\_nat.3 X0) k10\_newton) \wedge ((v1\_funct.1 (k12\_nat.3 X0)) \wedge ((v1\_partfun1 (k12\_nat.3 X0) k10\_newton) \wedge (v2\_pre\_poly (k12\_nat.3 X0)))))) \quad (4)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow((v1\_relat\_1\ (k12\_nat\_3\ X0))\wedge((v4\_relat\_1\ (k12\_nat\_3\ X0)\ k10\_newton)\wedge((v1\_funct\_1\ (k12\_nat\_3\ X0))\wedge((v1\_partfun1\ (k12\_nat\_3\ X0)\ k10\_newton)\wedge(v4\_valued\_0\ (k12\_nat\_3\ X0))))))\quad (5)$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge(v7\_ordinal1\ X0))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ k10\_newton)\wedge((v1\_funct\_1\ X1)\wedge(v1\_partfun1\ X1\ k10\_newton))))\Rightarrow((X1 = k13\_nat\_3\ X0)\Leftrightarrow((k13\_pre\_poly\ X1 = k1\_polynom2\ k10\_newton\ (k12\_nat\_3\ X0))\wedge(\forall X2.(v7\_ordinal1\ X2)\Rightarrow((X2 \in k1\_polynom2\ k10\_newton\ (k12\_nat\_3\ X0))\Rightarrow(k1\_funct\_1\ X1\ X2 = k1\_newton\ X2\ (k11\_nat\_3\ X0\ X2))))))\quad (6)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ k10\_newton)\wedge((v1\_funct\_1\ X1)\wedge(v1\_partfun1\ X1\ k10\_newton))))\Rightarrow((X1 = k12\_nat\_3\ X0)\Leftrightarrow(\forall X2.((v7\_ordinal1\ X2)\wedge(v1\_int\_2\ X2))\Rightarrow(k1\_funct\_1\ X1\ X2 = k11\_nat\_3\ X0\ X2))))\quad (7)$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow(\forall X1.(X1 = k13\_pre\_poly\ X0)\Leftrightarrow(\forall X2.(X2 \in X1)\Leftrightarrow(k1\_funct\_1\ X0\ X2\neq k6\_numbers)))\quad (8)$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v4\_valued\_0\ X0))\Rightarrow((v1\_relat\_1\ X0)\wedge(v3\_valued\_0\ X0))\quad (9)$$

### Theorem 1

$$\forall X0.((v7\_ordinal1\ X0)\wedge(v1\_int\_2\ X0))\Rightarrow(\forall X1.((\neg v1\_xboole\_0\ X1)\wedge(v7\_ordinal1\ X1))\Rightarrow((k11\_nat\_3\ X1\ X0\neq k6\_numbers)\Rightarrow(k1\_seq\_1\ (k13\_nat\_3\ X1)\ X0 = k1\_newton\ X0\ (k11\_nat\_3\ X1\ X0))))$$