

## t57\_nat\_3

(TMTj2HkqjdVmaCcgv6GxQciLQWpdhv7sm1i)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_polynom2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_newton : \iota$  be given. Let  $k13\_nat\_3 : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k12\_nat\_3 : \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  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  $k13\_pre\_poly : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_newton : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_nat\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.((\neg v1\_xboole\_0 X0) \wedge (v7\_ordinal1 X0)) \Rightarrow ((k1\_polynom2 k10\_newton (k12\_nat\_3 X0) = k1\_xboole\_0) \Rightarrow (X0 = np\_1)) \quad (1)$$

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.

$$\forall X0. ((\neg v1\_xboole\_0 X0) \wedge (v7\_ordinal1 X0)) \Rightarrow ((v1\_relat\_1 (k13\_nat\_3 X0)) \wedge ((v4\_relat\_1 (k13\_nat\_3 X0) k10\_newton) \wedge ((v1\_funct\_1 (k13\_nat\_3 X0)) \wedge (v1\_partfun1 (k13\_nat\_3 X0) k10\_newton)))) \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1\_xboole\_0 X0) \wedge (v7\_ordinal1 X0)) \Rightarrow (\forall X1. \\
& ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 k10\_newton) \wedge ((v1\_funct\_1 X1) \wedge \\
& (v1\_partfun1 X1 k10\_newton)))) \Rightarrow ((X1 = k13\_nat\_3 X0) \Leftrightarrow ((k13\_pre\_poly \\
& X1 = k1\_polynom2 k10\_newton (k12\_nat\_3 X0)) \wedge (\forall X2.(v7\_ordinal1 \\
& X2) \Rightarrow ((X2 \in k1\_polynom2 k10\_newton (k12\_nat\_3 X0)) \Rightarrow (k1\_funct\_1 \\
& X1 X2 = k1\_newton X2 (k11\_nat\_3 X0 X2))))))
\end{aligned} \tag{5}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v1\_xboole\_0 X0) \wedge (v7\_ordinal1 X0)) \Rightarrow ((k1\_polynom2 \\
& k10\_newton (k13\_nat\_3 X0) = k1\_xboole\_0) \Rightarrow (X0 = np\_1))
\end{aligned}$$