

# t40\_nat\_3 (TMPYizbcmnsWWKXVZoQFD- wQyZWVfAmLLaB5)

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Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_int\_2 : \iota \Rightarrow o$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k12\_nat\_3 : \iota \Rightarrow \iota$  be given. Let  $k1\_newton : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_1 : \iota$  be given. Let  $k11\_nat\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $k10\_newton : \iota$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_valued\_0 : \iota \Rightarrow o$  be given. Let  $r1\_int\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow ((\neg r1\_xxreal\_0 X0 np\_1) \Rightarrow (k11\_nat\_3 (k1\_newton X0 X1) X0 = X1))) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v3\_valued\_0 X0))) \Rightarrow (k1\_seq\_1 X0 X1 = k1\_funct\_1 X0 X1) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1 X0) \wedge (v7\_ordinal1 X1)) \Rightarrow (v7\_ordinal1 (k1\_newton X0 X1)) \quad (3)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow ((v1\_relat\_1 (k12\_nat\_3 X0)) \wedge ((v4\_relat\_1 (k12\_nat\_3 X0) k10\_newton) \wedge ((v1\_funct\_1 (k12\_nat\_3 X0)) \wedge ((v1\_partfun1 (k12\_nat\_3 X0) k10\_newton) \wedge (v4\_valued\_0 (k12\_nat\_3 X0))))))) \quad (4)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge (( \\ v4\_relat\_1\ X1\ k10\_newton) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_partfun1\ X1\ k10\_newton)))) \Rightarrow \\ ((X1 = k12\_nat\_3\ X0) \Leftrightarrow (\forall X2.((v7\_ordinal1\ X2) \wedge (v1\_int\_2 \\ X2)) \Rightarrow (k1\_funct\_1\ X1\ X2 = k11\_nat\_3\ X0\ X2)))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow ((v1\_int\_2\ X0) \Leftrightarrow ((\neg r1\_xxreal\_0\ X0 \\ np\_1) \wedge (\forall X1.(v7\_ordinal1\ X1) \Rightarrow (\neg(r1\_int\_1\ X1\ X0) \wedge ((X1 \neq \\ np\_1) \wedge (X1 \neq X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v4\_valued\_0\ X0)) \Rightarrow ((v1\_relat\_1 \\ X0) \wedge (v3\_valued\_0\ X0)) \quad (8)$$

**Theorem 1**

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.((v7\_ordinal1\ X1) \wedge ( \\ v1\_int\_2\ X1)) \Rightarrow (k1\_seq\_1\ (k12\_nat\_3\ (k1\_newton\ X1\ X0))\ X1 = X0))$$