

## t5\_radix\_4

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Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_1 : \iota$  be given. Let  $np\_3 : \iota$  be given. Let  $r1\_radix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_radix\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_radix\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_radix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_nat\_d : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_newton : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_radix\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_radix\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_radix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_nat\_d : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow (\forall X2. \\ & (v7\_ordinal1 X2) \Rightarrow ((r1\_xxreal\_0 X1 X0) \Rightarrow (r1\_xxreal\_0 (k7\_nat\_d \\ & X1 X2) X0)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow (\forall X2. \\ & (v7\_ordinal1 X2) \Rightarrow ((r1\_xxreal\_0 np\_2 X0) \Rightarrow (k7\_radix\_3 (k2\_xcmplx\_0 \\ & X2 np\_1) X0 (k2\_xcmplx\_0 X2 np\_1) (k10\_radix\_3 X2 X0 (k10\_radix\_1 \\ & X0 X2 X1)) = k5\_radix\_3 (k4\_radix\_1 X2 X0 X2 (k10\_radix\_1 X0 X2 X1)) \\ & X0)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow (k7\_nat\_d \\ & (k2\_xcmplx\_0 X0 X1) X1 = X0)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 np\_3) \wedge (m2\_subset\_1 np\_3 k1\_numbers k5\_numbers)) \wedge \\ & ((m1\_subset\_1 np\_3 k5\_numbers) \wedge (m1\_subset\_1 np\_3 k1\_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 np\_2) \wedge (m2\_subset\_1 np\_2 k1\_numbers k5\_numbers)) \wedge \\ & ((m1\_subset\_1 np\_2 k5\_numbers) \wedge (m1\_subset\_1 np\_2 k1\_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$k2\_xcmplx\_0 \ np\_2 \ np\_1 = np\_3 \quad (7)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 \ X0) \Rightarrow (\forall X1.(v7\_ordinal1 \ X1) \Rightarrow (\forall X2. \\ & (v7\_ordinal1 \ X2) \Rightarrow ((r1\_xxreal\_0 \ np\_1 \ X2) \Rightarrow (k4\_radix\_1 \ X2 \ X0 \ X2 \\ & (k10\_radix\_1 \ X0 \ X2 \ (k4\_nat\_d \ X1 \ (k1\_newton \ (k1\_radix\_1 \ X0) \ X2))) = \\ & k4\_radix\_1 \ X2 \ X0 \ X2 \ (k10\_radix\_1 \ X0 \ X2 \ X1)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1 \ X0) \wedge (v7\_ordinal1 \ X1)) \Rightarrow (v7\_ordinal1 \ (k1\_newton \ X0 \ X1)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1 \ X0) \wedge (v7\_ordinal1 \ X1)) \Rightarrow (m1\_subset\_1 \ (k4\_nat\_d \ X0 \ X1) \ k5\_numbers) \quad (11)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 \ X0) \Rightarrow (m1\_subset\_1 \ (k1\_radix\_1 \ X0) \ k5\_numbers) \quad (12)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 \ X0 \ k4\_ordinal1) \Rightarrow (v7\_ordinal1 \ X0) \quad (13)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(v7\_ordinal1 \ X0) \Rightarrow (\forall X1.(v7\_ordinal1 \ X1) \Rightarrow (\forall X2. \\ & (v7\_ordinal1 \ X2) \Rightarrow (((r1\_xxreal\_0 \ np\_1 \ X2) \wedge ((r1\_xxreal\_0 \ np\_3 \\ & X0) \wedge (r1\_radix\_1 \ (k2\_xcmplx\_0 \ X2 \ np\_1) \ X1 \ X0))) \Rightarrow (k7\_radix\_3 \ ( \\ & k2\_xcmplx\_0 \ X2 \ np\_1) \ X0 \ (k2\_xcmplx\_0 \ X2 \ np\_1) \ (k10\_radix\_3 \ X2 \\ & X0 \ (k10\_radix\_1 \ X0 \ X2 \ (k4\_nat\_d \ X1 \ (k1\_newton \ (k1\_radix\_1 \ X0) \ X2)))))) = \\ & k5\_radix\_3 \ (k4\_radix\_1 \ X2 \ X0 \ X2 \ (k10\_radix\_1 \ X0 \ X2 \ X1) \ X0)))) \end{aligned}$$